`

Glenn Springs Holdings, Inc.

A subsidiary of Occidental Petroleum

Joe Branch
Site Manager
Direct Dial (231) 670-6809

7601 Old Channel Trail
Montague, MI 49437

January 31, 2017

Reference No. 001069

Ms. Gloria M. Sosa
USEPA
Region II, Site Investigation & Compliance Branch
290 Broadway, 20th Floor
New York, NY 10007-1866

Mr. Brian P. Sadowski
NYSDEC
270 Michigan Avenue
Buffalo, NY 14203-2999

Dear Ms. Sosa and Mr. Sadowski:

Re: Quarterly Operations Report – Fourth Quarter 2016
Hyde Park Remedial Program
Bedrock and Overburden Monitoring Programs
NYSDEC Site No. 932021

In accordance with the July 2006 "Performance Monitoring Plan" (PMP), the following is the Quarterly Operations Report for the Hyde Park Remedial Program for the period October 1, 2016 through December 31, 2016. A total of 3.8 million gallons of aqueous phase liquid (APL) was collected, treated, and discharged in compliance with the Site's City of Niagara Falls Publicly Owned Treatment Works (POTW) Significant Industrial Users Wastewater Discharge Permit #49. No non-aqueous phase liquid (NAPL) was for disposal this quarter. The potentiometric contours are consistent with previous interpretations. Flow Zones 6, 7, and 9 have dewatered areas between the landfill and the gorge face. The current data continue to support the interpretation of effective hydraulic containment and inward gradients.

The performance monitoring data are presented as follows:

- Figures 1-9: Showing the potentiometric surface for the bedrock flow zones and overburden
- Table 1: Water level elevation summary
- Tables 2, 3, and 4: Daily, weekly, and quarterly treatment system effluent monitoring data
- Attachment A: Purge well performance graphs indicating daily level and flow information

Due to a malfunctioning transducer at piezometer PMW-1M-09, the continuous water levels at PMW-1M-09 for the fourth quarter of 2016 were not able to be retrieved. For this reason, Figure 10, which shows the continuously recorded water levels at flow zone 9 piezometer PMW-1M-09, is not included in this Quarterly Operations Report. Conversations with the manufacturer have indicated that the manufacturer may be able to retrieve the data. As such, the unit has been sent to the manufacturer for them to attempt to retrieve the water level data from the fourth quarter of 2016. If the data is retrieved, the PMW-1M-09 water level data for the fourth quarter of 2016 will be included in the First Quarter 2017 Quarterly Operations Report.

The pumping wells are operational and functioning as designed. The pumps are operated to maintain a water level between a typical range of 2.5 feet above (pump on) and 2.5 feet below (pump off) a specific setpoint in accordance with the setpoint range defined in the Operation & Maintenance Manual. The following minor operational and setpoint issues were investigated or resolved during the fourth quarter of 2016:

- The water levels in PW-1U, PW-2L, PW-2UR, PW-3L and PW-5UR were above setpoint range on November 3 due to a power interruption. The water levels returned to within setpoint range on November 4.
- The water level in PW-3L was above setpoint range from December 19 to December 31 due to low flow. The well was repaired on January 3, 2017.
- The water level in PW-6MR was above setpoint range from October 27 to October 31 due to electrical issues. The well was repaired on October 31 and the water level returned to within setpoint range on November 2.
- The water level in PW-8U was above setpoint range on December 28 due to low flow. The well was repaired on December 28 and the water level returned to within setpoint range on December 29.

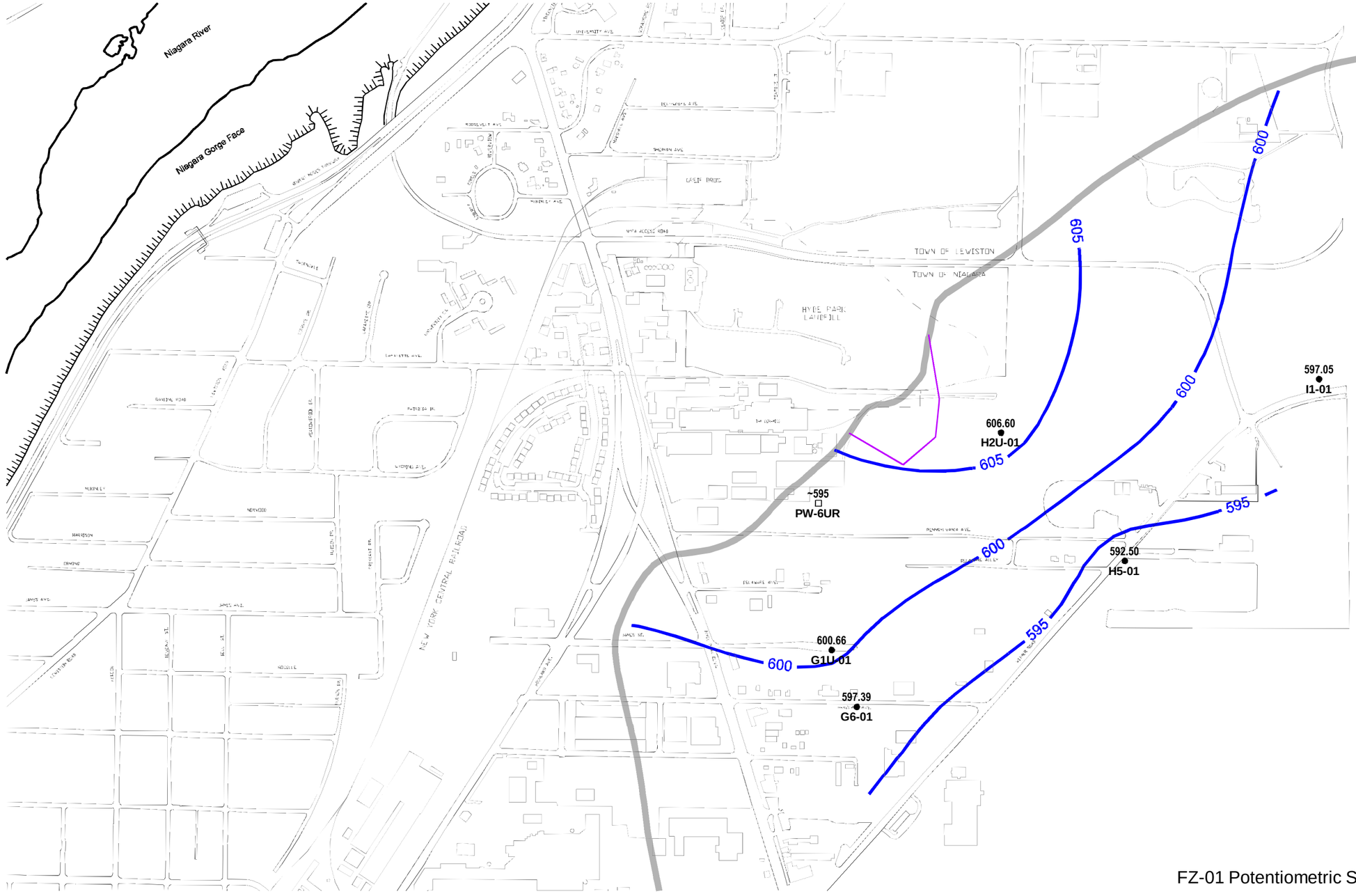
If you have any questions, please feel free to contact me at (231) 670-6809 or by email at joseph_branch@oxy.com.

Very truly yours,

GLENN SPRINGS HOLDINGS, INC.

Joe Branch
Site Manager
231-670-6809 Cell

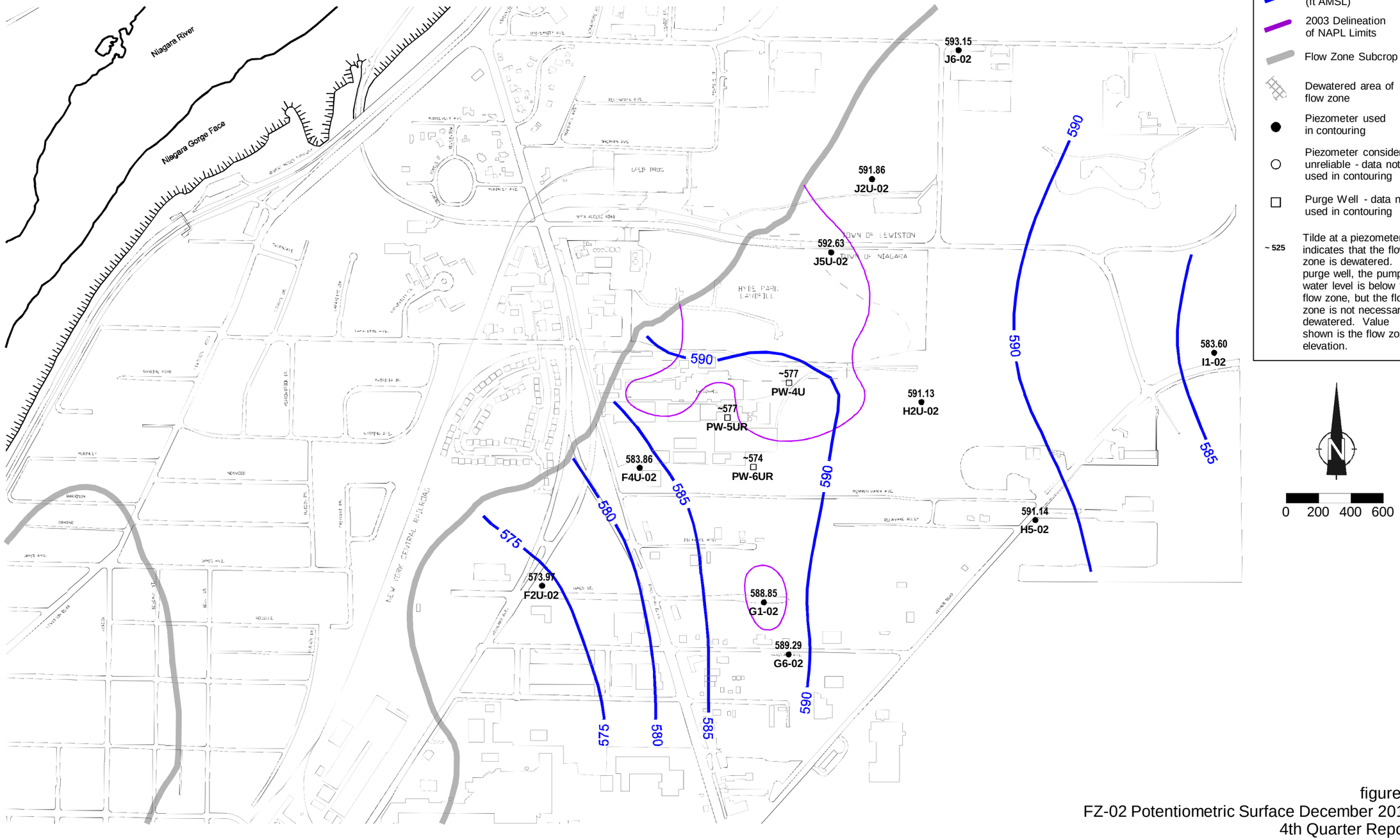
JB/eew/26
Encl.
cc: C. Babcock, GSH
M. Forcucci, NYSDOH
J. Pentilchuk, GHD
G. May, NYSDEC
D. Hoyt, GHD



Legend

- Potentiometric Contour (ft AMSL)
- 2003 Delineation of NAPL Limits
- Flow Zone Subcrop
- Dewatered area of flow zone
- ● Piezometer used in contouring
- ○ Piezometer considered unreliable - data not used in contouring
- □ Purge Well - data not used in contouring
- ~ 525 Tilde at a piezometer indicates that the flow zone is dewatered. At a purge well, the pumping water level is below the flow zone, but the flow zone is not necessarily dewatered. Value shown is the flow zone elevation.

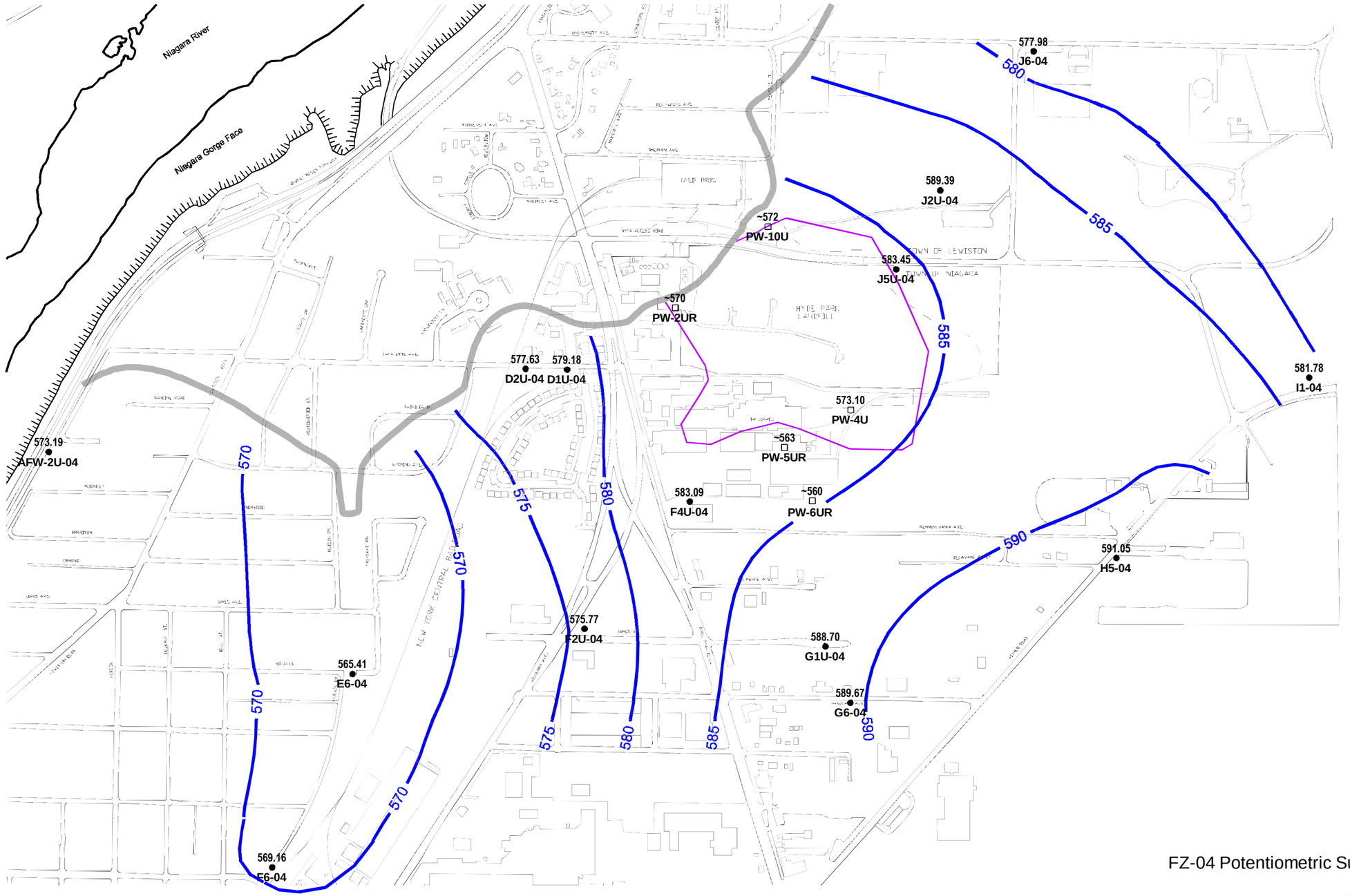
figure 1
FZ-01 Potentiometric Surface December 2016
4th Quarter Report
Hyde Park Landfill Site
Glenn Springs Holdings, Inc.
Niagara Falls, New York



Legend

- Potentiometric Contour (ft AMSL)
- 2003 Delineation of NAPL Limits
- Flow Zone Subcrop
- Dewatered area of flow zone
- ● Piezometer used in contouring
- ○ Piezometer considered unreliable - data not used in contouring
- □ Purge Well - data not used in contouring
- ~ 525 Tilde at a piezometer indicates that the flow zone is dewatered. At a purge well, the pumping water level is below the flow zone, but the flow zone is not necessarily dewatered. Value shown is the flow zone elevation.

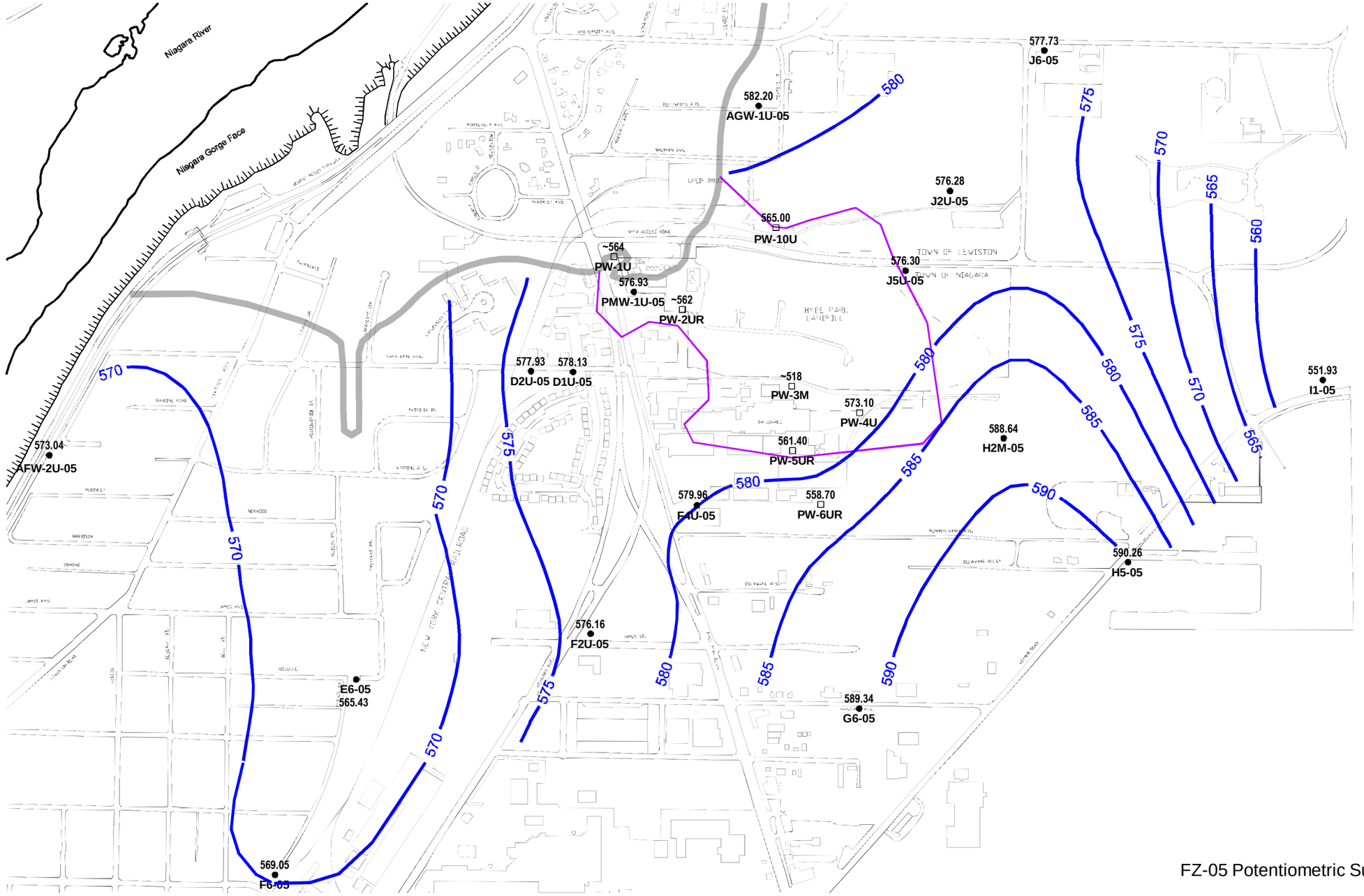
figure 2
FZ-02 Potentiometric Surface December 2016
4th Quarter Report
Hyde Park Landfill Site
Glenn Springs Holdings, Inc.
Niagara Falls, New York



Legend

- Potentiometric Contour (ft AMSL)
- 2003 Delineation of NAPL Limits
- Flow Zone Subcrop
- Dewatered area of flow zone
- ● Piezometer used in contouring
- ○ Piezometer considered unreliable - data not used in contouring
- □ Purge Well - data not used in contouring
- ~ 525 Tilde at a piezometer indicates that the flow zone is dewatered. At a purge well, the pumping water level is below the flow zone, but the flow zone is not necessarily dewatered. Value shown is the flow zone elevation.

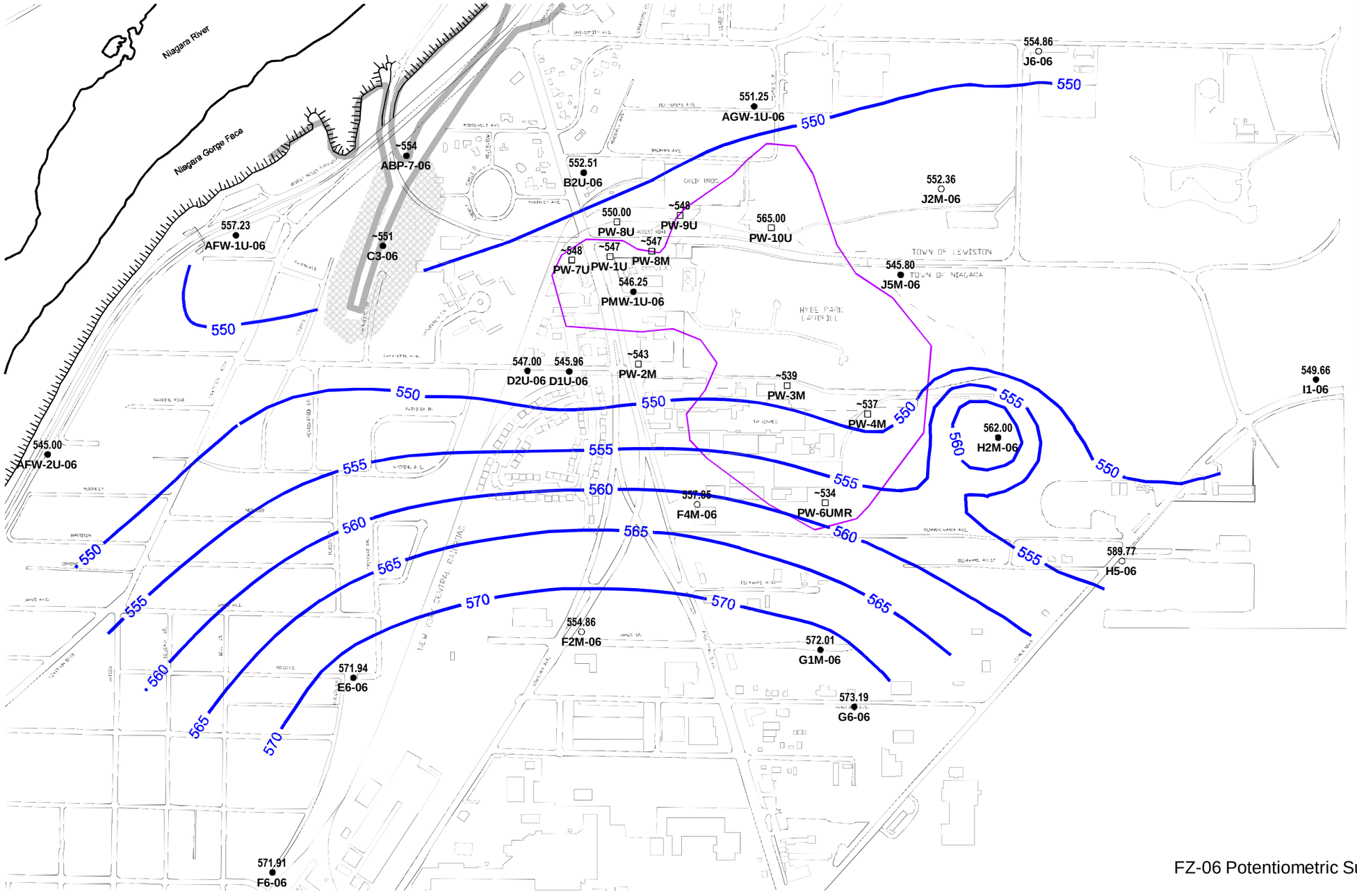
figure 3
FZ-04 Potentiometric Surface December 2016
4th Quarter Report
Hyde Park Landfill Site
Glenn Springs Holdings, Inc.
Niagara Falls, New York



Legend

- Potentiometric Contour (ft AMSL)
- 2003 Delineation of NAPL Limits
- Flow Zone Subcrop
- Dewatered area of flow zone
- Piezometer used in contouring
- Piezometer considered unreliable - data not used in contouring
- Purge Well - data not used in contouring
- ~ 525 — Tilde at a piezometer indicates that the flow zone is dewatered. At a purge well, the pumping water level is below the flow zone, but the flow zone is not necessarily dewatered. Value shown is the flow zone elevation.

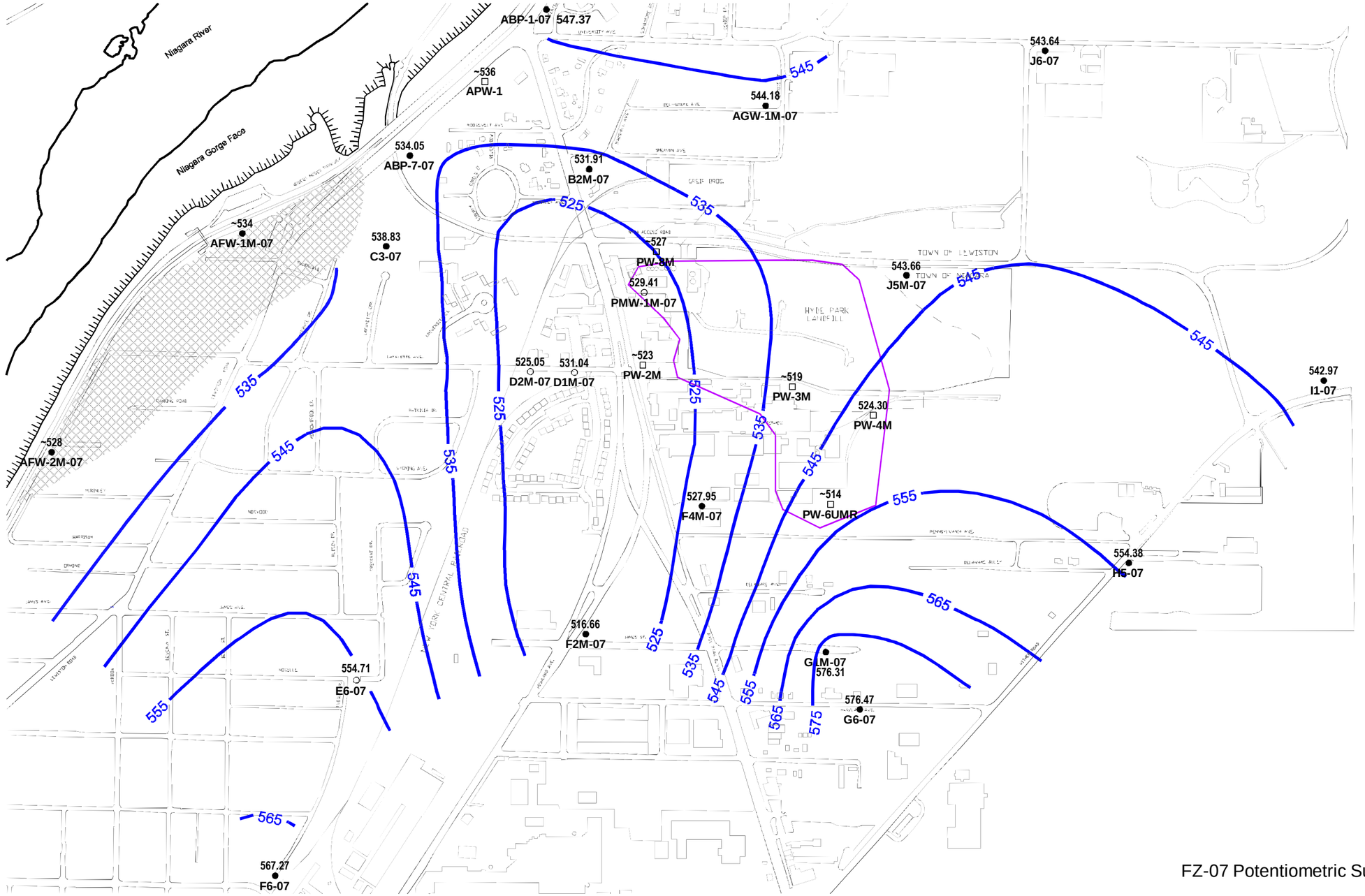
figure 4
FZ-05 Potentiometric Surface December 2016
4th Quarter Report
Hyde Park Landfill Site
Glenn Springs Holdings, Inc.
Niagara Falls, New York



Legend

- Potentiometric Contour (ft AMSL)
- 2003 Delineation of NAPL Limits
- Flow Zone Subcrop
- Dewatered area of flow zone
- ● Piezometer used in contouring
- ○ Piezometer considered unreliable - data not used in contouring
- □ Purge Well - data not used in contouring
- ~ 525 Tilde at a piezometer indicates that the flow zone is dewatered. At a purge well, the pumping water level is below the flow zone, but the flow zone is not necessarily dewatered. Value shown is the flow zone elevation.

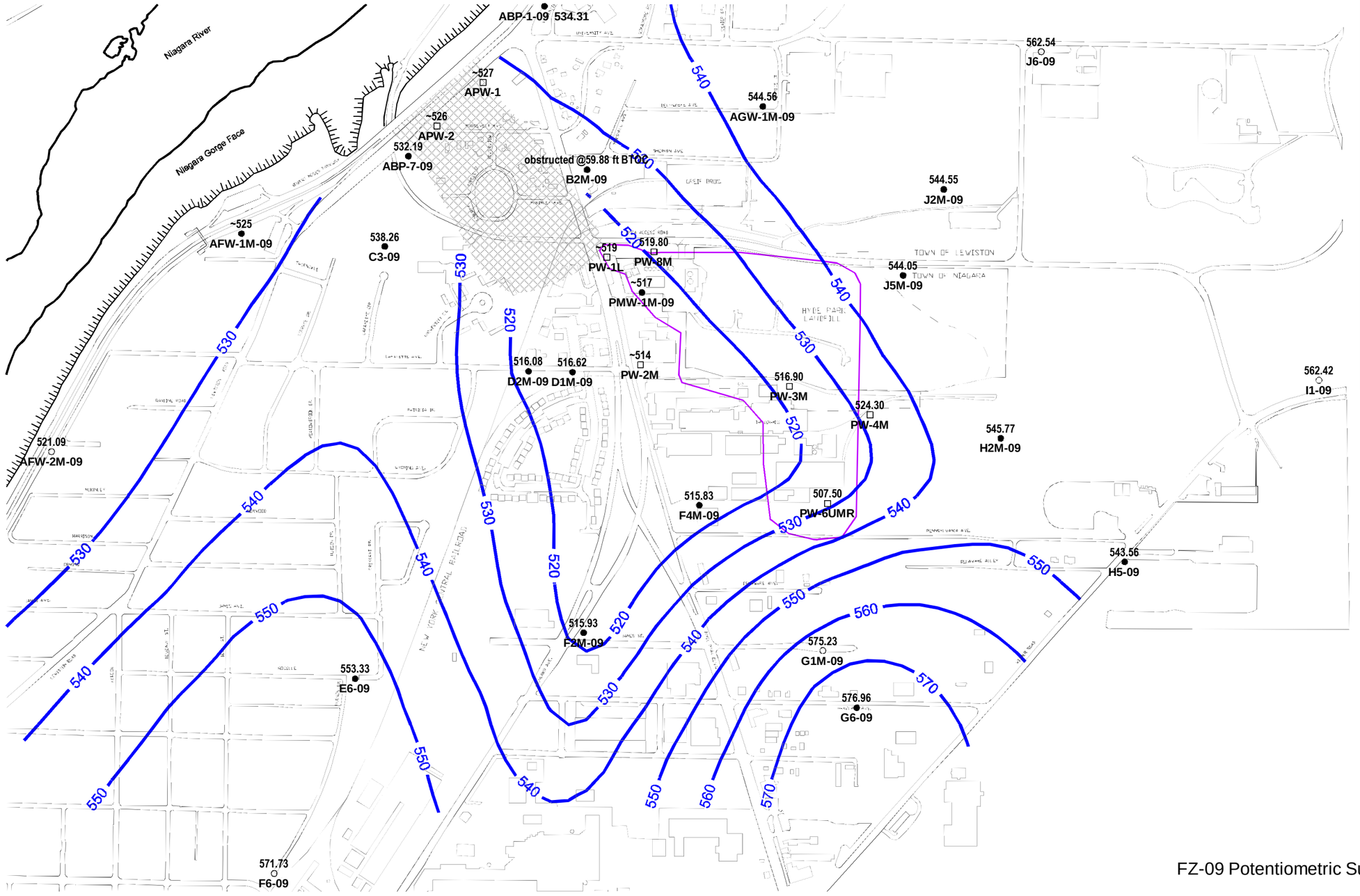
figure 5
FZ-06 Potentiometric Surface December 2016
4th Quarter Report
Hyde Park Landfill Site
Glenn Springs Holdings, Inc.
Niagara Falls, New York



Legend

- Potentiometric Contour (ft AMSL)
- 2003 Delineation of NAPL Limits
- Flow Zone Subcrop
- Dewatered area of flow zone
- ● Piezometer used in contouring
- ○ Piezometer considered unreliable - data not used in contouring
- □ Purge Well - data not used in contouring
- ~ 525 Tilde at a piezometer indicates that the flow zone is dewatered. At a purge well, the pumping water level is below the flow zone, but the flow zone is not necessarily dewatered. Value shown is the flow zone elevation.

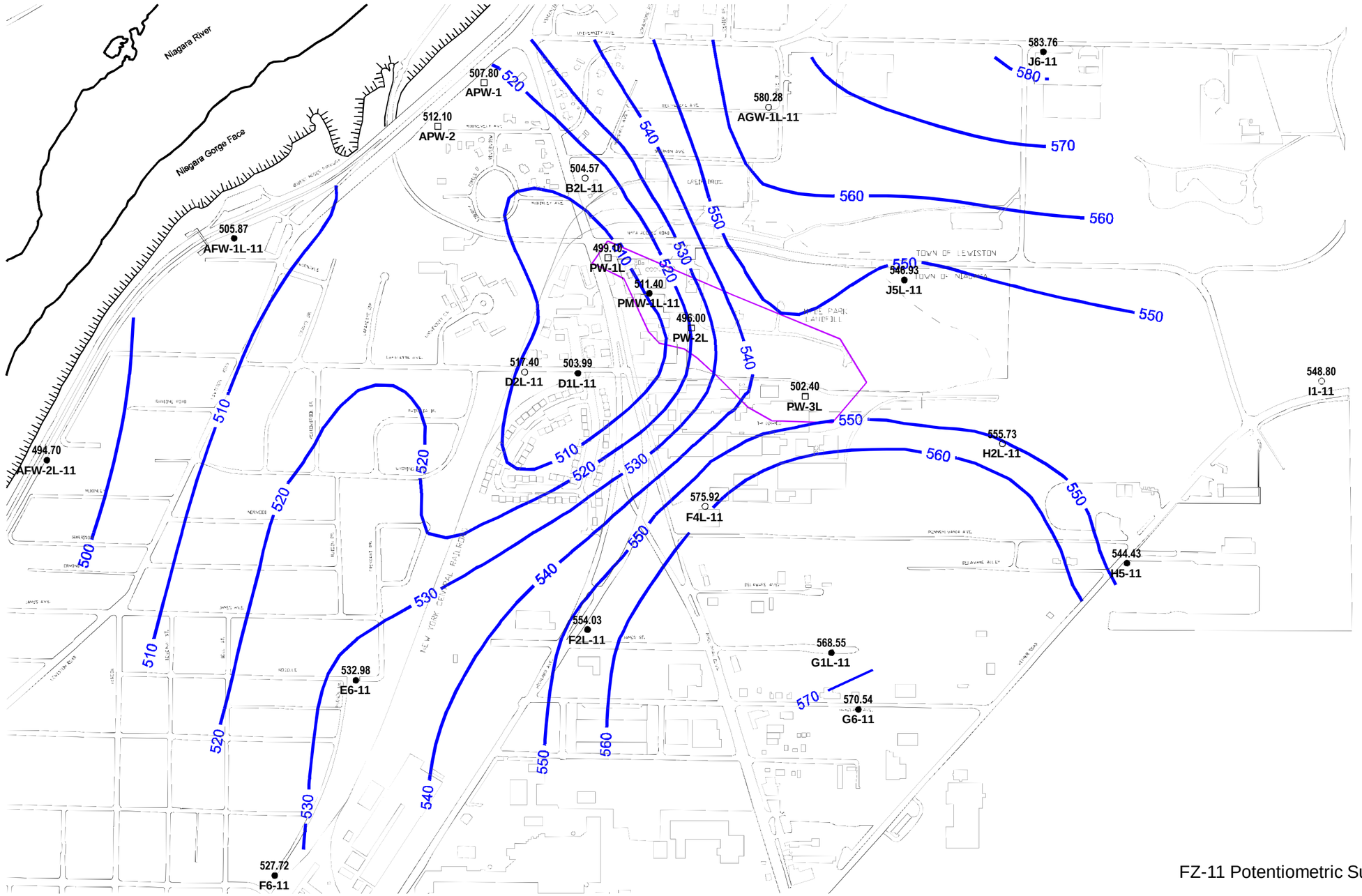
figure 6
FZ-07 Potentiometric Surface December 2016
4th Quarter Report
Hyde Park Landfill Site
Glenn Springs Holdings, Inc.
Niagara Falls, New York



Legend

- Potentiometric Contour (ft AMSL)
- 2003 Delineation of NAPL Limits
- Flow Zone Subcrop
- Dewatered area of flow zone
- ● Piezometer used in contouring
- ○ Piezometer considered unreliable - data not used in contouring
- □ Purge Well - data not used in contouring
- ~ 525 Tilde at a piezometer indicates that the flow zone is dewatered. At a purge well, the pumping water level is below the flow zone, but the flow zone is not necessarily dewatered. Value shown is the flow zone elevation.

figure 7
FZ-09 Potentiometric Surface December 2016
4th Quarter Report
Hyde Park Landfill Site
Glenn Springs Holdings, Inc.
Niagara Falls, New York



Legend

- Potentiometric Contour (ft AMSL)
- 2003 Delineation of NAPL Limits
- Flow Zone Subcrop
- Dewatered area of flow zone
- ● Piezometer used in contouring
- ○ Piezometer considered unreliable - data not used in contouring
- □ Purge Well - data not used in contouring
- ~ 525 Tilde at a piezometer indicates that the flow zone is dewatered. At a purge well, the pumping water level is below the flow zone, but the flow zone is not necessarily dewatered. Value shown is the flow zone elevation.

figure 8
FZ-11 Potentiometric Surface December 2016
4th Quarter Report
Hyde Park Landfill Site
Glenn Springs Holdings, Inc.
Niagara Falls, New York

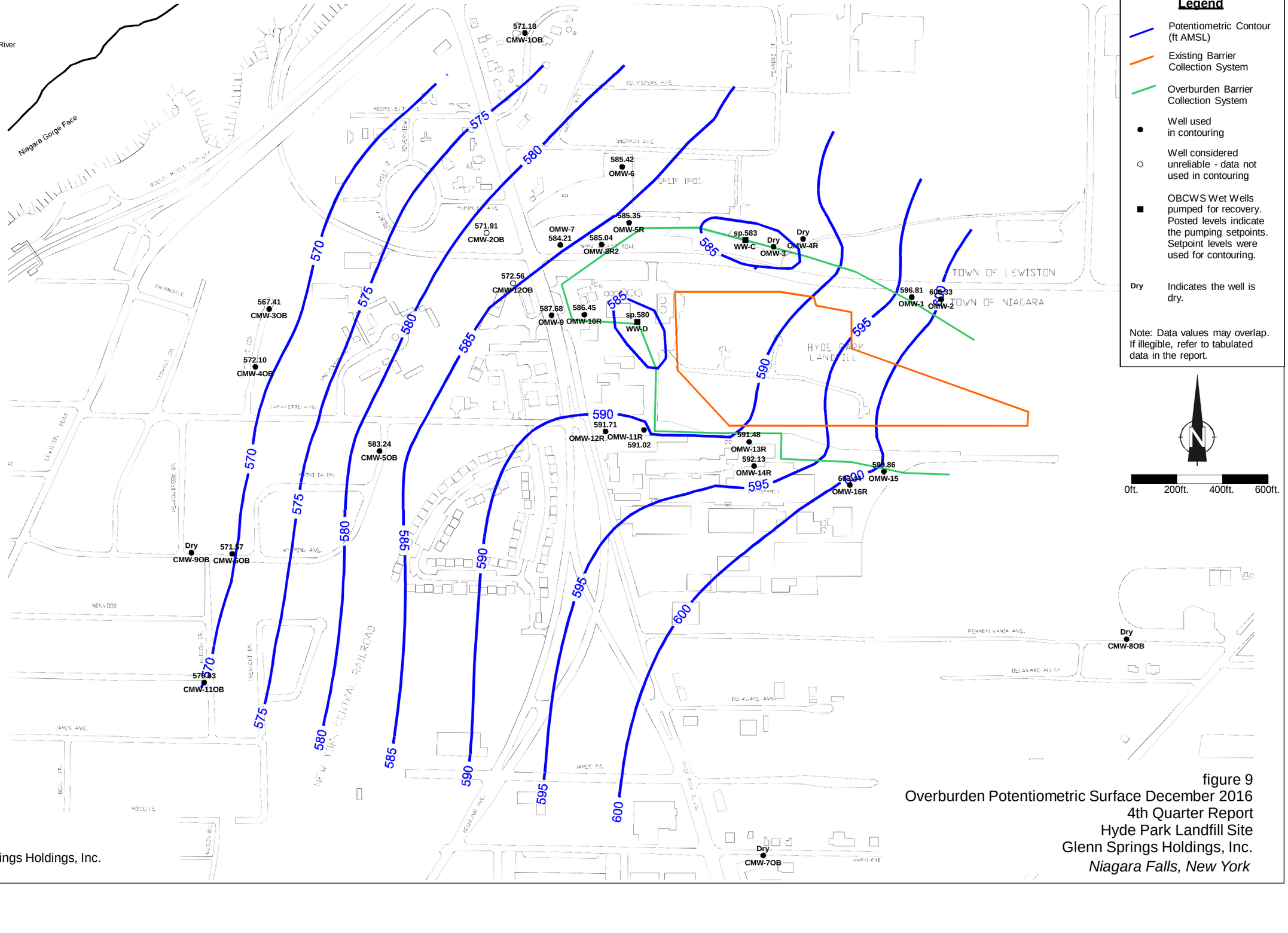


figure 9
Overburden Potentiometric Surface December 2016
4th Quarter Report
Hyde Park Landfill Site
Glenn Springs Holdings, Inc.
Niagara Falls, New York

Glenn Springs Holdings, Inc.

Table 1

Water Level Elevation Summary
Fourth Quarter - 2016
Hyde Park RRT Program

Well	Reference Elevation (ft AMSL)	Depth to Water (ft)	Water Level Elevation (ft AMSL)
Overburden			
CMW-2OB	590.79	18.88	571.91
CMW-3OB	582.13	14.72	567.41
CMW-4OB	574.28	2.18	572.10
CMW-5OB	583.43	0.19	583.24
CMW-6OB	571.89	0.32	571.57
CMW-7OB	611.00	Dry	Dry
CMW-8OB	616.11	Dry	Dry
CMW-9OB	571.76	Dry	Dry
CMW-1OB	576.80	5.62	571.18
CMW-11OB	572.85	2.82	570.03
CMW-12OB	594.74	22.18	572.56
MH20	605.87	5.02	600.85
MH21	599.77	6.28	593.49
MH22	593.37	Dry	Dry
MH23	587.05	Dry	Dry
MH24	582.57	6.69	575.88
MH25	583.82	6.29	577.53
MH26	584.48	7.86	576.62
MH27	586.12	10.73	575.39
MH28	585.23	16.43	568.80
MH29	604.58	Dry	Dry
MH30	599.49	10.10	589.39
MH31	590.10	9.61	580.49
MH32	592.01	9.67	582.34
MH33	592.51	8.74	583.77
MH34	598.34	7.39	590.95
MH35	605.69	6.55	599.14
MH35A	605.69	7.49	598.20
OMW-1	605.28	8.47	596.81
OMW-2	605.99	5.66	600.33
OMW-3	598.63	Dry	Dry
OMW-4R	601.17	Dry	Dry
OMW-5R	591.31	5.96	585.35
OMW-6	587.62	2.20	585.42
OMW-7	592.74	8.53	584.21
OMW-8R2	594.67	9.63	585.04
OMW-9	595.27	7.59	587.68
OMW-10R	595.13	8.68	586.45
OMW-11R	597.52	6.50	591.02
OMW-12R	597.20	5.49	591.71
OMW-13R	601.50	10.02	591.48
OMW-14R	599.64	7.51	592.13
OMW-15	607.48	7.62	599.86
OMW-16R	607.62	4.18	603.44
SC-2	625.61	47.31	578.30
SC-3	638.72	59.82	578.90
SC-4	639.35	61.85	577.50
SC-5	634.07	44.87	589.20
SC-6	631.15	52.95	578.20

Table 1

Water Level Elevation Summary
Fourth Quarter - 2016
Hyde Park RRT Program

Well	Reference Elevation (ft AMSL)	Depth to Water (ft)	Water Level Elevation (ft AMSL)
Shallow Bedrock			
CMW-1SH	576.11	13.10	563.01
CMW-2SH	590.51	20.02	570.49
CMW-3SH	581.91	33.62	548.29
CMW-4SH	574.16	8.12	566.04
CMW-5SH	583.36	9.00	574.36
CMW-6SH	572.05	10.49	561.56
CMW-7SH	610.58	13.88	596.70
CMW-8SH	615.95	10.23	605.72
CMW-9SH	571.96	12.06	559.90
CMW-11SH	573.21	8.37	564.84
CMW-12SH	597.02	27.89	569.13
Flow Zone 1			
G1U-01	617.08	11.85	597.39
G6-01	609.24	16.42	600.66
H2U-01	620.92	14.32	606.60
H5-01	617.61	25.11	592.50
I1-01	625.58	28.53	597.05
Flow Zone 2			
F2U-02	599.89	25.92	573.97
F4U-02	602.32	23.99	575.77
G1-02	616.86	28.01	588.85
G6-02	608.65	19.36	589.29
H2U-02	620.88	26.33	591.14
H5-02	617.47	29.75	591.13
I1-02	625.47	41.87	583.60
J2U-02	609.66	13.58	592.63
J5U-02	606.21	17.80	591.86
J6-02	609.23	16.08	593.15
Flow Zone 4			
AFW-2U-04	593.48	20.29	573.19
D1U-04	593.77	12.82	565.41
D2U-04	590.65	14.59	579.18
E6-04	578.23	13.02	577.63
F2U-04	599.76	23.99	575.77
F4U-04	602.19	19.10	583.09
F6-04	588.06	18.90	569.16
G1U-04	616.96	28.26	588.70
G6-04	609.15	19.48	589.67
H5-04	617.40	26.35	591.05
I1-04	625.30	43.52	581.78
J2U-04	609.42	22.60	583.45
J5U-04	606.05	20.03	589.39
J6-04	609.12	31.14	577.98

Table 1

Water Level Elevation Summary
Fourth Quarter - 2016
Hyde Park RRT Program

Well	Reference Elevation (ft AMSL)	Depth to Water (ft)	Water Level Elevation (ft AMSL)
Flow Zone 5			
AFW-2U-05	593.33	20.29	573.04
AGW-1U-05	591.80	9.60	582.20
D1U-05	593.51	15.38	578.13
D2U-05	590.56	12.63	577.93
E6-05	578.04	23.48	576.16
F2U-05	599.64	12.61	565.43
F4U-05	602.06	22.10	579.96
F6-05	587.85	18.80	569.05
G6-05	609.13	19.79	589.34
H2M-05	621.59	32.95	588.64
H5-05	617.31	73.32	551.93
I1-05	625.25	27.05	590.26
J2U-05	609.30	29.57	576.30
J5U-05	605.87	33.02	576.28
J6-05	609.02	31.29	577.73
PMW-1U-05	598.00	21.07	576.93
Flow Zone 6			
ABP-7-06	575.78	Dry	Dry
AFW-1U-06	571.83	14.60	557.23
AFW-2U-06	593.22	48.22	545.00
AGW-1U-06	591.66	40.41	551.25
B2U-06	589.29	36.78	552.51
C3-06	585.78	Dry	Dry
D1U-06	593.25	47.29	545.96
D2U-06	590.38	43.38	547.00
E6-06	577.99	6.05	571.94
F2M-06	599.06	44.20	554.86
F4M-06	602.05	44.74	572.01
F6-06	587.84	44.20	557.85
G1M-06	616.75	15.93	571.91
G6-06	609.09	35.90	573.19
H2M-06	621.42	59.42	562.00
H5-06	617.17	75.49	549.66
I1-06	625.15	60.42	545.80
J2M-06	608.94	27.40	589.77
J5M-06	606.22	56.58	552.36
J6-06	608.93	54.07	554.86
PMW-1U-06	597.92	51.67	546.25

Table 1

Water Level Elevation Summary
Fourth Quarter - 2016
Hyde Park RRT Program

Well	Reference Elevation (ft AMSL)	Depth to Water (ft)	Water Level Elevation (ft AMSL)
Flow Zone 7			
ABP-1-07	576.44	29.07	547.37
ABP-7-07	575.73	66.83	526.61
AFW-1M-07	571.41	41.68	534.05
AFW-2M-07	593.44	Dry	Dry
AGW-1M-07	592.91	48.73	544.18
B2M-07	589.52	57.61	531.91
C3-07	585.62	46.79	538.83
D1M-07	594.15	63.11	531.04
D2M-07	590.77	65.72	525.05
E6-07	577.91	23.20	554.71
F2M-07	598.91	82.25	516.66
F4M-07	601.91	73.96	527.95
F6-07	587.68	20.41	567.27
G1M-07	616.68	40.37	576.31
G6-07	609.06	32.59	576.47
H5-07	617.05	62.67	554.38
I1-07	625.14	82.17	542.97
J5M-07	606.07	62.41	543.66
J6-07	608.85	65.21	543.64
PMW-1M-07	598.50	69.09	529.41
Flow Zone 9			
ABP-1-09	575.49	41.18	534.31
ABP-7-09	575.67	46.42	524.70
AFW-1M-09	571.12	43.48	532.19
AFW-2M-09	593.32	48.19	544.56
AGW-1M-09	592.75	72.23	521.09
B2M-09	589.34	Obstructed	Obstructed
C3-09	585.00	46.74	538.26
D1M-09	594.02	77.40	516.62
D2M-09	590.66	74.58	516.08
E6-09	577.82	24.49	553.33
F2M-09	598.71	82.78	515.93
F4M-09	601.79	85.96	515.83
F6-09	587.53	15.80	571.73
G1M-09	616.58	41.35	575.23
G6-09	608.98	32.02	576.96
H2M-09	621.32	75.55	545.77
H5-09	616.93	73.37	543.56
I1-09	624.91	62.49	562.42
J2M-09	608.77	64.22	544.55
J5M-09	605.82	61.77	544.05
J6-09	608.76	46.22	562.54
PMW-1M-09	598.34	82.24	516.10

Table 1

Water Level Elevation Summary
Fourth Quarter - 2016
Hyde Park RRT Program

Well	Reference Elevation (ft AMSL)	Depth to Water (ft)	Water Level Elevation (ft AMSL)
Flow Zone 11			
AFW-1L-11	572.10	66.23	505.87
AFW-2L-11	593.43	98.73	494.70
AGW-1L-11	592.71	12.43	580.28
B2L-11	589.65	85.08	504.57
D1L-11	593.80	89.81	503.99
D2L-11	590.21	72.81	517.40
E6-11	577.72	44.74	532.98
F2L-11	598.94	44.91	554.03
F4L-11	602.22	59.68	527.72
F6-11	587.40	26.30	575.92
G1L-11	616.84	65.00	555.73
G6-11	608.89	48.29	568.55
H2L-11	620.73	38.35	570.54
H5-11	616.81	72.38	544.43
I1-11	624.75	75.95	548.80
J5L-11	607.20	60.27	546.93
J6-11	608.68	24.92	583.76
PMW-1L-11	598.84	87.44	511.40
Purge Wells			
APW-1	564.98	57.18	507.80
APW-2	569.89	57.79	512.10
PW-1L	593.16	84.71	511.90
PW-1U	593.16	46.46	546.70
PW-2L	597.29	101.29	496.00
PW-2M	596.61	94.06	499.10
PW-2UR	594.75	35.75	559.00
PW-3L	599.05	96.65	502.40
PW-3M	597.79	80.89	516.90
PW-4M	606.93	82.63	524.30
PW-4U	604.85	31.75	573.10
PW-5UR	601.31	39.91	561.40
PW-6UMR	609.31	101.81	507.50
PW-6UR	608.47	49.77	558.70
PW-7U	592.47	49.57	542.90
PW-8M	592.67	72.87	519.80
PW-8U	589.27	39.27	550.00
PW-9U	587.47	48.07	539.40
PW-10U	593.54	28.54	565.00

Notes:

ft AMSL	- Feet above mean sea level
Dry	- No water present at the time of measurement
Obstructed	- Well obstructed at 59.80 ft below top of well
*	- Instrument sensor error

Table 2

Leachate Treatment System Daily Effluent Monitoring Data
Fourth Quarter - 2016
Hyde Park RRT Program

	Effluent	
Date	**pH**	**Flow**
	(su)	(gal)
10/01/16	--	--
10/02/16	--	--
10/03/16	7.0	57,000
10/04/16	7.0	85,000
10/05/16	--	--
10/06/16	7.0	85,000
10/07/16	--	--
10/08/16	--	--
10/09/16	--	--
10/10/16	7.1	72,000
10/11/16	7.0	112,000
10/12/16	7.0	30,000
10/13/16	7.0	41,000
10/14/16	7.1	80,000
10/15/16	--	--
10/16/16	--	--
10/17/16	7.1	63,000
10/18/16	--	--
10/19/16	7.0	109,000
10/20/16	--	--
10/21/16	7.0	76,000
10/22/16	--	--
10/23/16	--	--
10/24/16	--	--
10/25/16	7.0	114,000
10/26/16	7.0	118,000
10/27/16	7.1	96,000
10/28/16	--	--
10/29/16	--	--
10/30/16	--	--
10/31/16	--	--
11/01/16	7.0	120,000
11/02/16	7.0	91,000
11/03/16	7.0	56,000
11/04/16	7.0	91,000
11/05/16	--	--
11/06/16	--	--
11/07/16	7.0	103,000

Table 2

Leachate Treatment System Daily Effluent Monitoring Data
Fourth Quarter - 2016
Hyde Park RRT Program

	Effluent	
Date	**pH**	**Flow**
	(su)	(gal)
11/08/16	7.0	80,000
11/09/16	7.0	40,000
11/10/16	7.0	49,000
11/11/16	--	--
11/12/16	--	--
11/13/16	--	--
11/14/16	--	--
11/15/16	7.1	98,000
11/16/16	7.0	97,000
11/17/16	7.0	20,000
11/18/16	7.1	92,000
11/19/16	--	--
11/20/16	--	--
11/21/16	7.0	65,000
11/22/16	7.1	71,000
11/23/16	7.1	58,000
11/24/16	--	--
11/25/16	--	--
11/26/16	--	--
11/27/16	--	--
11/28/16	7.0	105,000
11/29/16	7.0	64,000
11/30/16	7.1	62,000
12/01/16	--	--
12/02/16	7.0	53,000
12/03/16	--	--
12/04/16	--	--
12/05/16	7.0	81,000
12/06/16	7.0	100,000
12/07/16	7.0	39,000
12/08/16	--	--
12/09/16	7.1	58,000
12/10/16	--	--
12/11/16	--	--
12/12/16	7.1	104,000
12/13/16	7.0	64,000
12/14/16	7.0	64,000
12/15/16	7.0	35,000
12/16/16	--	--

Table 2

Leachate Treatment System Daily Effluent Monitoring Data
Fourth Quarter - 2016
Hyde Park RRT Program

	Effluent	
Date	**pH**	**Flow**
	(su)	(gal)
12/17/16	--	--
12/18/16	--	--
12/19/16	7.1	105,000
12/20/16	7.0	75,000
12/21/16	7.0	30,000
12/22/16	7.0	27,000
12/23/16	--	--
12/24/16	--	--
12/25/16	--	--
12/26/16	--	--
12/27/16	7.0	126,000
12/28/16	7.0	126,000
12/29/16	7.0	136,000
12/30/16	7.0	69,000
12/31/16	--	--

Notes:

-- -Not measured-no flow
su - Standard Unit
gal - Gallons

Analytical Results Summary
Weekly Sampling - Leachate Treatment System
Third Quarter - 2016
Hyde Park RRT Program

Effluent

Parameter	Units	10/04/16	10/11/16	10/20/16	10/26/16	11/02/16	11/09/16	11/15/16
Volatiles								
1,1,1-Trichloroethane	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,2,2-Tetrachloroethane	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,2-Trichloroethane	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1-Dichloroethane	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1-Dichloroethene	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2,4-Trichlorobenzene	µg/L	0.48 J	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dichlorobenzene	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dichloroethane	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dichloropropane	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,3-Dichlorobenzene	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,4-Dichlorobenzene	µg/L	0.48 J	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2-Chlorotoluene	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	0.66 J	2.0 U	2.0 U
3-Chlorotoluene	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
4-Chlorotoluene	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Benzene	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bromodichloromethane	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bromoform	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bromomethane (Methyl bromide)	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Carbon disulfide	µg/L	2.0 U	2.0 U	11	0.60 J	10	9.5	12
Carbon tetrachloride	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chlorobenzene	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloroethane	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloroform (Trichloromethane)	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloromethane (Methyl chloride)	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
cis-1,2-Dichloroethene	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
cis-1,3-Dichloropropene	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Dichlorodifluoromethane (CFC-12)	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Ethylbenzene	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
m&p-Xylenes	µg/L	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Methylene chloride	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
m-Monochlorobenzotrifluoride	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
o-Monochlorobenzotrifluoride	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
o-Xylene	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
p-Monochlorobenzotrifluoride	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	4.8	2.0 U	2.0 U
Styrene	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Tetrachloroethene	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Toluene	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
trans-1,2-Dichloroethene	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
trans-1,3-Dichloropropene	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Trichloroethene	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Trichlorofluoromethane (CFC-11)	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Vinyl acetate	µg/L	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Vinyl chloride	µg/L	550	550	670	430	500	540	590
Xylenes (total)	µg/L	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U
General Chemistry								
Phenolics (total)	mg/L	0.0270	0.0282	0.0152	0.0169	0.0137	0.0137	0.0442

Analytical Results Summary
Weekly Sampling - Leachate Treatment System
Third Quarter - 2016
Hyde Park RRT Program

Effluent

Parameter	Units	11/22/16	11/30/16	12/07/16	12/14/16	12/21/16	12/28/16
Volatiles							
1,1,1-Trichloroethane	µg/L	2.0 U	2.0 U	2.0 U	1.0 U	2.0 U	2.0 U
1,1,2,2-Tetrachloroethane	µg/L	2.0 U	2.0 U	2.0 U	1.0 U	2.0 U	2.0 U
1,1,2-Trichloroethane	µg/L	2.0 U	2.0 U	2.0 U	1.0 U	2.0 U	2.0 U
1,1-Dichloroethane	µg/L	2.0 U	2.0 U	2.0 U	1.0 U	2.0 U	2.0 U
1,1-Dichloroethene	µg/L	2.0 U	2.0 U	2.0 U	1.0 U	2.0 U	2.0 U
1,2,4-Trichlorobenzene	µg/L	2.0 U	2.0 U	2.0 U	1.0 U	2.0 U	2.0 U
1,2-Dichlorobenzene	µg/L	2.0 U	2.0 U	2.0 U	1.0 U	2.0 U	2.0 U
1,2-Dichloroethane	µg/L	2.0 U	2.0 U	2.0 U	1.0 U	2.0 U	2.0 U
1,2-Dichloropropane	µg/L	2.0 U	2.0 U	2.0 U	1.0 U	2.0 U	2.0 U
1,3-Dichlorobenzene	µg/L	2.0 U	2.0 U	2.0 U	1.0 U	2.0 U	2.0 U
1,4-Dichlorobenzene	µg/L	2.0 U	2.0 U	2.0 U	1.0 U	2.0 U	2.0 U
2-Chlorotoluene	µg/L	2.0 U	2.0 U	2.0 U	1.0 U	2.0 U	2.0 U
3-Chlorotoluene	µg/L	2.0 U	2.0 U	2.0 U	1.0 U	2.0 U	2.0 U
4-Chlorotoluene	µg/L	2.0 U	2.0 U	2.0 U	1.0 U	2.0 U	2.0 U
Benzene	µg/L	2.0 U	2.0 U	2.0 U	1.0 U	0.44 J	2.0 U
Bromodichloromethane	µg/L	2.0 U	2.0 U	2.0 U	1.0 U	2.0 U	2.0 U
Bromoform	µg/L	2.0 U	2.0 U	2.0 U	1.0 U	2.0 U	2.0 U
Bromomethane (Methyl bromide)	µg/L	2.0 U	2.0 U	2.0 U	1.0 U	2.0 U	2.0 U
Carbon disulfide	µg/L	11	3.9	2.0 U	1.4	2.2	11
Carbon tetrachloride	µg/L	2.0 U	2.0 U	2.0 U	1.0 U	2.0 U	2.0 U
Chlorobenzene	µg/L	2.0 U	2.0 U	2.0 U	1.0 U	2.0 U	2.0 U
Chloroethane	µg/L	2.0 U	2.0 U	2.0 U	1.0 U	2.0 U	2.0 U
Chloroform (Trichloromethane)	µg/L	2.0 U	2.0 U	2.0 U	1.0 U	2.0 U	2.0 U
Chloromethane (Methyl chloride)	µg/L	2.0 U	2.0 U	2.0 U	1.0 U	2.0 U	2.0 U
cis-1,2-Dichloroethene	µg/L	2.0 U	2.0 U	2.0 U	1.0 U	0.68 J	2.0 U
cis-1,3-Dichloropropene	µg/L	2.0 U	2.0 U	2.0 U	1.0 U	2.0 U	2.0 U
Dichlorodifluoromethane (CFC-12)	µg/L	2.0 U	2.0 U	2.0 U	1.0 U	2.0 U	2.0 U
Ethylbenzene	µg/L	2.0 U	2.0 U	2.0 U	1.0 U	2.0 U	2.0 U
m&p-Xylenes	µg/L	4.0 U	4.0 U	4.0 U	2.0 U	4.0 U	4.0 U
Methylene chloride	µg/L	2.0 U	2.0 U	2.0 U	1.0 U	2.0 U	2.0 U
m-Monochlorobenzotrifluoride	µg/L	2.0 U	2.0 U	2.0 U	1.0 U	2.0 U	2.0 U
o-Monochlorobenzotrifluoride	µg/L	2.0 U	2.0 U	2.0 U	1.0 U	2.0 U	2.0 U
o-Xylene	µg/L	2.0 U	2.0 U	2.0 U	1.0 U	2.0 U	2.0 U
p-Monochlorobenzotrifluoride	µg/L	2.0 U	2.0 U	2.0 U	1.0 U	2.0 U	2.0 U
Styrene	µg/L	2.0 U	2.0 U	2.0 U	1.0 U	2.0 U	2.0 U
Tetrachloroethene	µg/L	2.0 U	2.0 U	2.0 U	1.0 U	2.0 U	2.0 U
Toluene	µg/L	2.0 U	2.0 U	2.0 U	1.0 U	2.0 U	2.0 U
trans-1,2-Dichloroethene	µg/L	2.0 U	2.0 U	2.0 U	1.0 U	2.0 U	2.0 U
trans-1,3-Dichloropropene	µg/L	2.0 U	2.0 U	2.0 U	1.0 U	2.0 U	2.0 U
Trichloroethene	µg/L	2.0 U	2.0 U	2.0 U	1.0 U	2.0 U	2.0 U
Trichlorofluoromethane (CFC-11)	µg/L	2.0 U	2.0 U	2.0 U	1.0 U	2.0 U	2.0 U
Vinyl acetate	µg/L	4.0 U	4.0 U	4.0 U	2.0 U	4.0 U	4.0 U
Vinyl chloride	µg/L	520	430	490	380 J	430	360
Xylenes (total)	µg/L	6.0 U	6.0 U	6.0 U	3.0 U	6.0 U	6.0 U
General Chemistry							
Phenolics (total)	mg/L	0.0215	0.019	0.0205	0.0329	0.0241	0.0410

Notes:

J - Estimated concentration
U - Not detected at the associated reporting limit
µg/L - Microgram per liter

Analytical Results Summary
Quarterly Sampling - Leachate Treatment System
Fourth Quarter - 2016
Hyde Park RRT Program

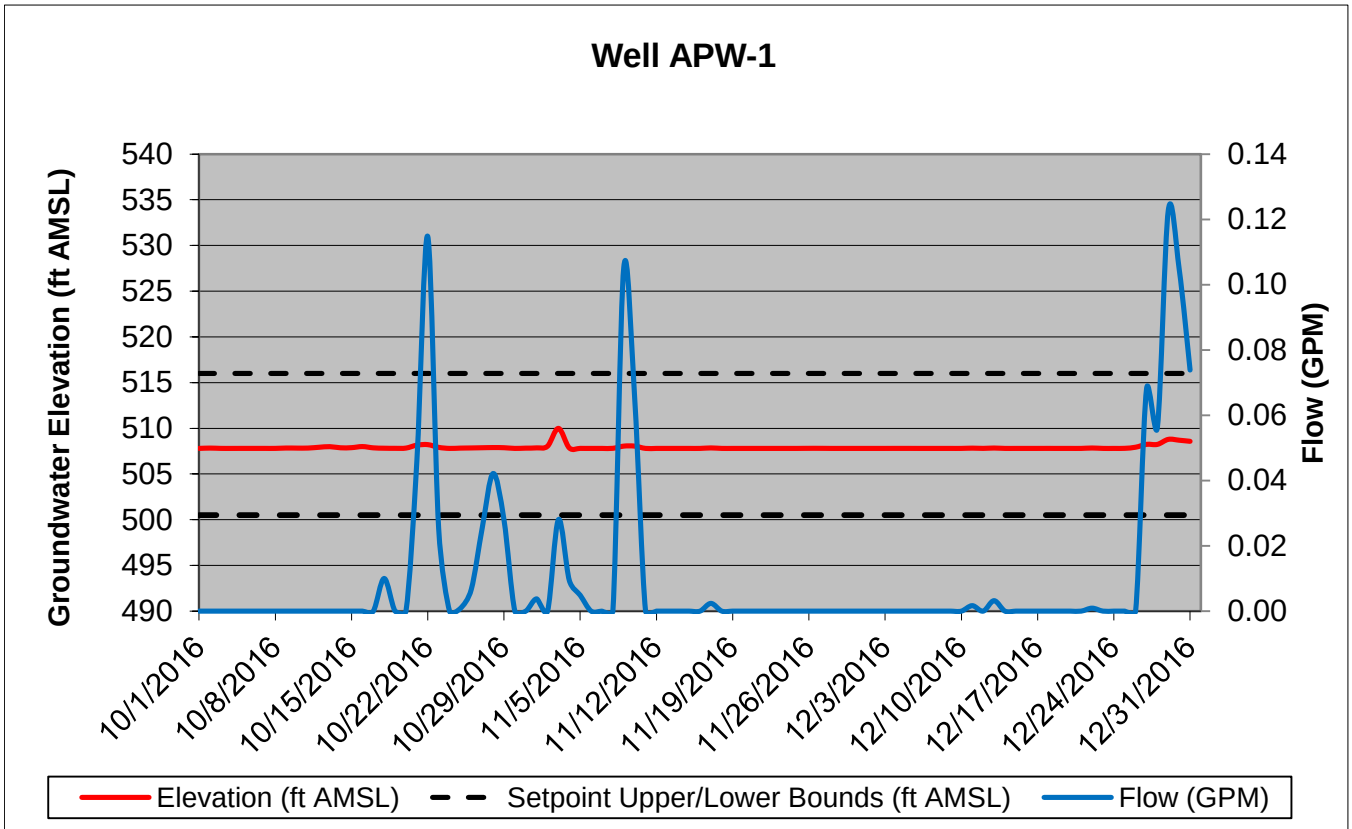
Sample Location:		**EFFLUENT**	**EFFLUENT**
Sample ID:		**HP92816 EFF**	**HP92816 EFF**
Sample Date:		**12/14/2016**	**12/14/2016**
Parameters	**Units**		
Volatile Organic Compounds			
Vinyl chloride	µg/L	350	--
General Chemistry			
Phosphorus	mg/L	--	0.14

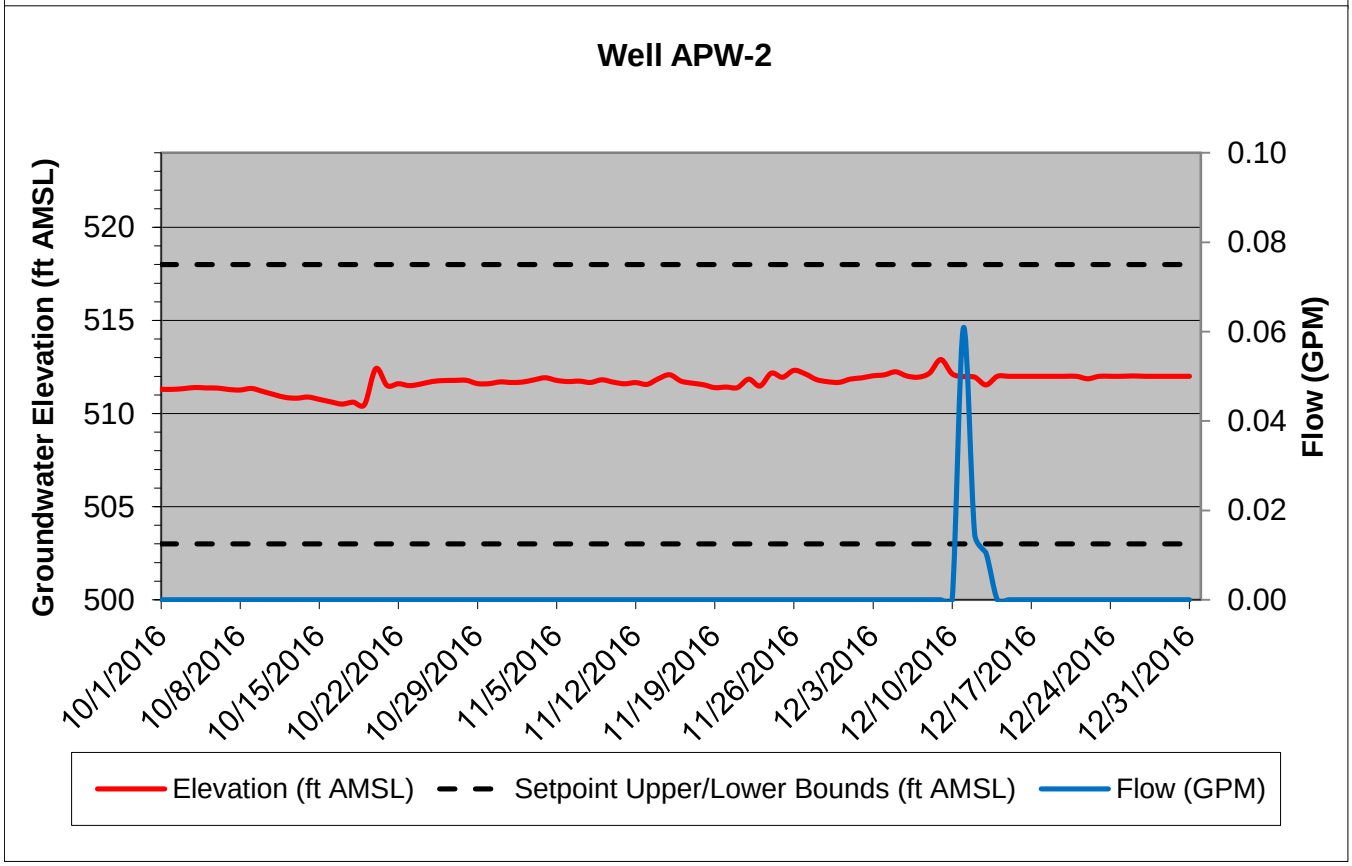
Notes:

-- Not applicable

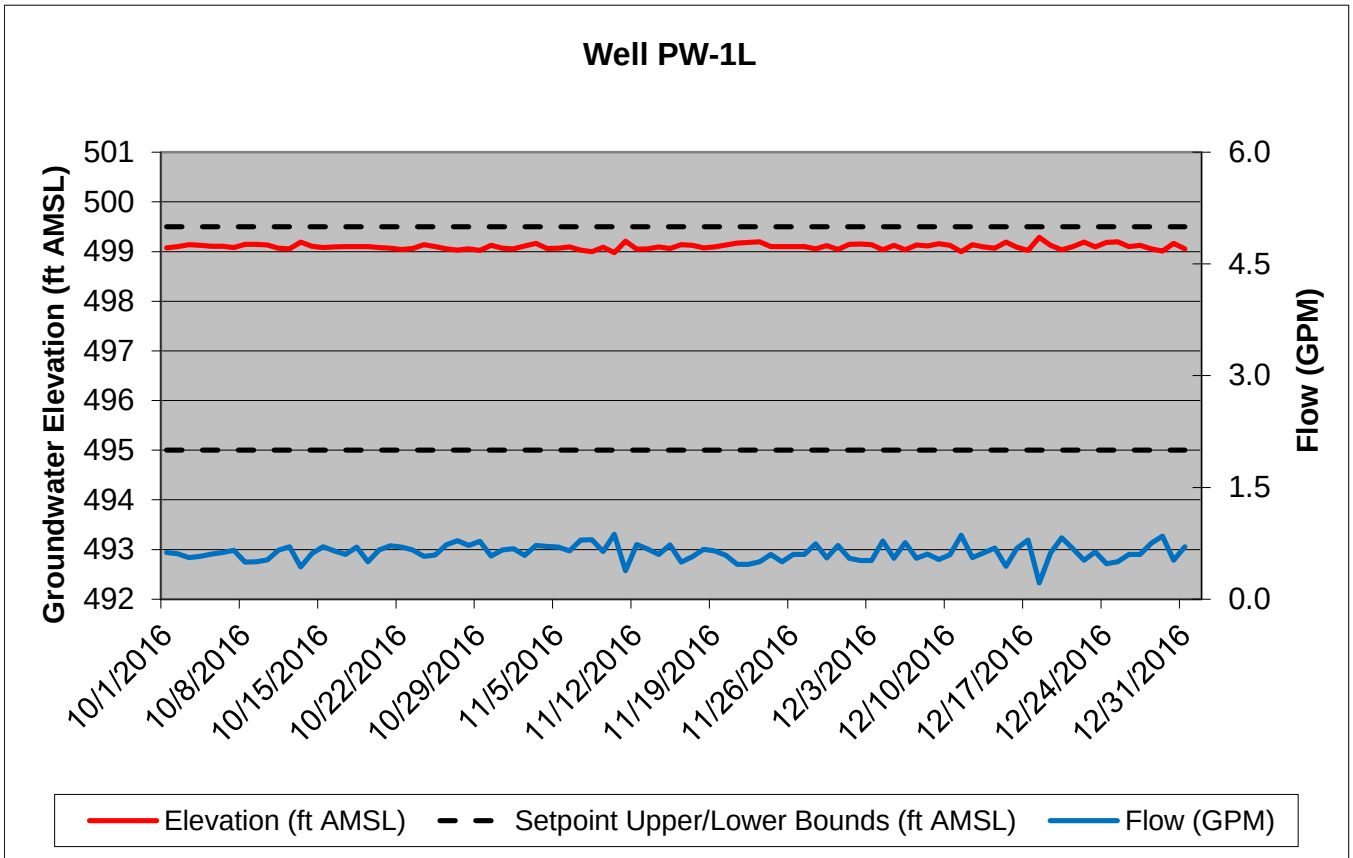
Attachment A

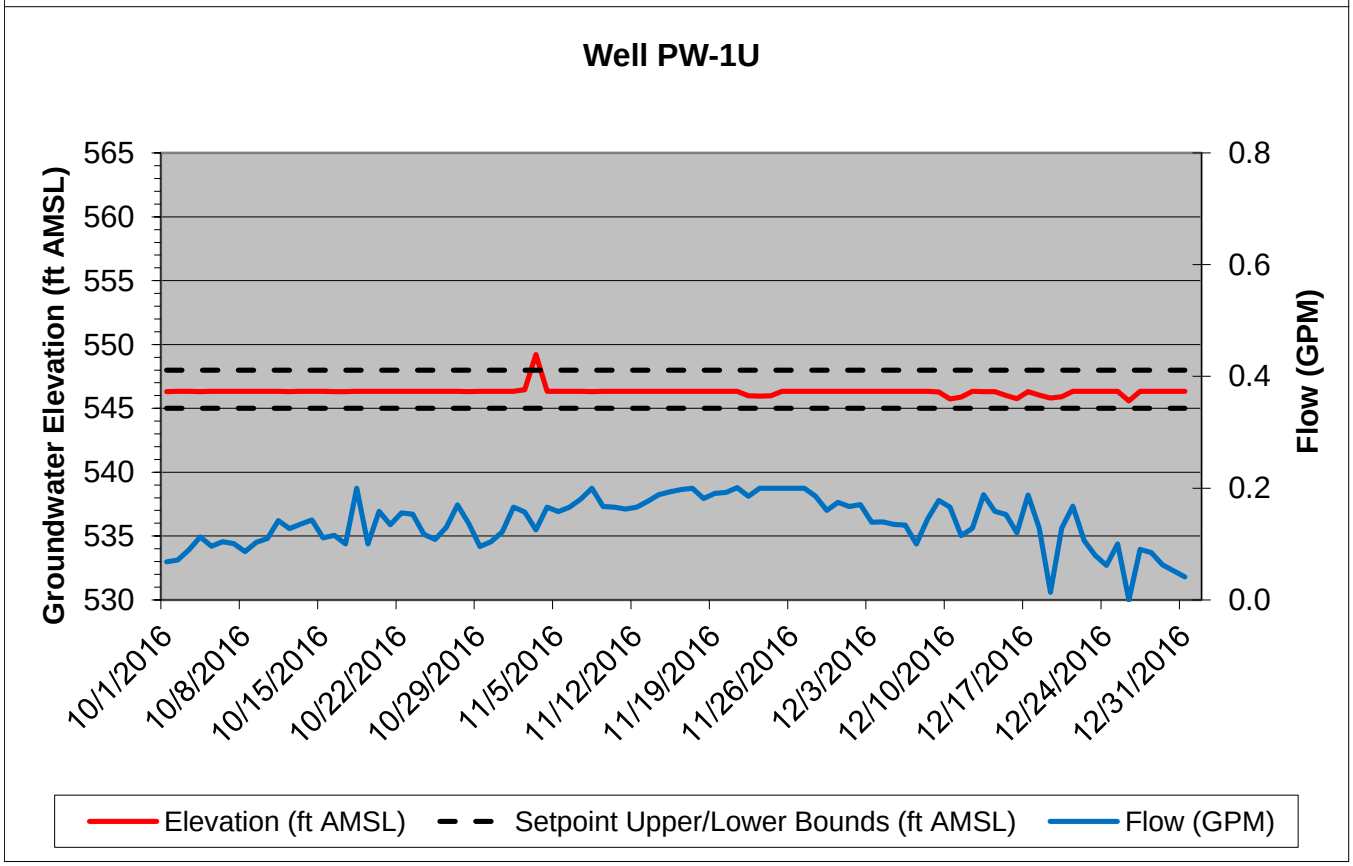
FOURTH QUARTER 2016 - PUMPING WELL PERFORMANCE GRAPHS
HYDE PARK



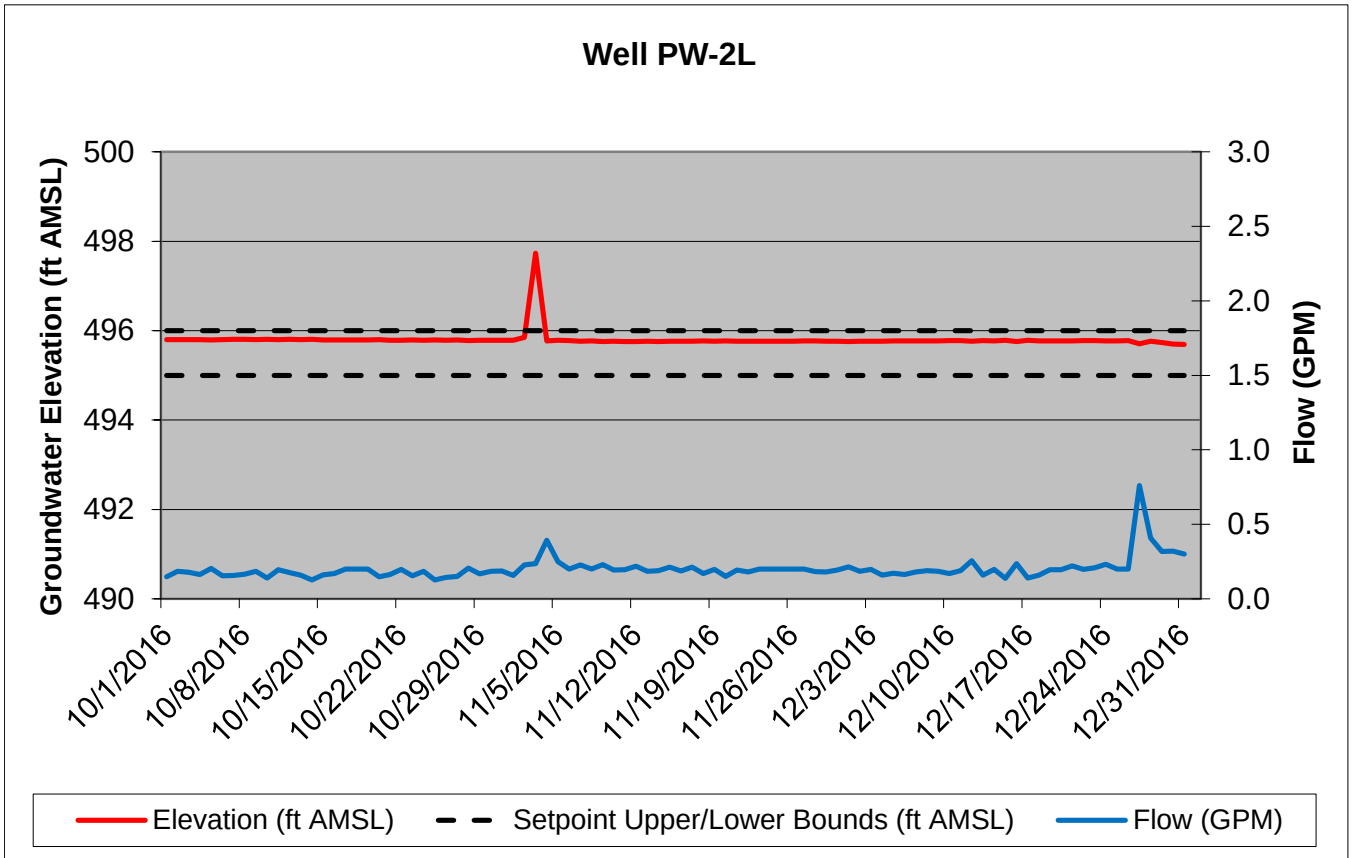


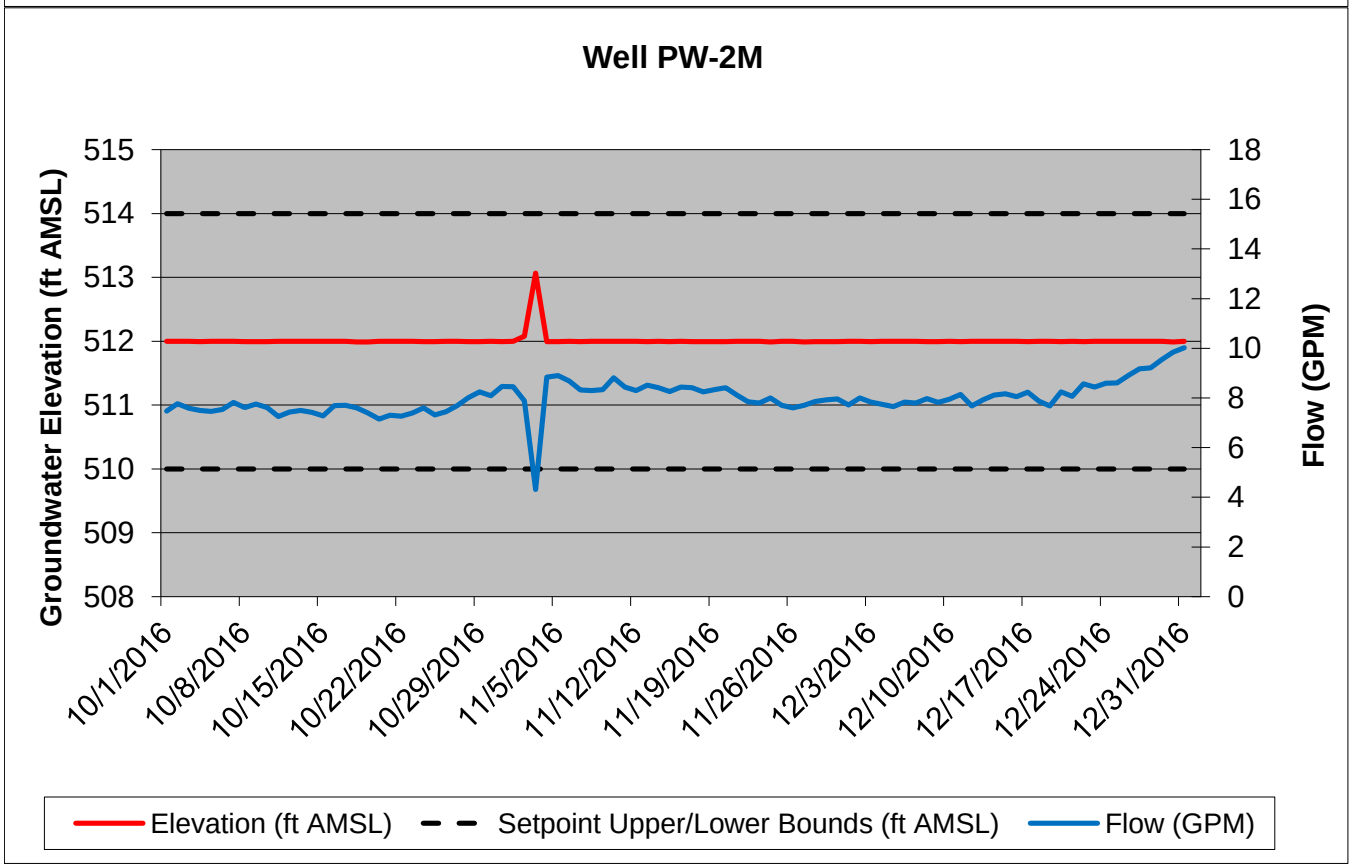
FOURTH QUARTER 2016 - PUMPING WELL PERFORMANCE GRAPHS
HYDE PARK



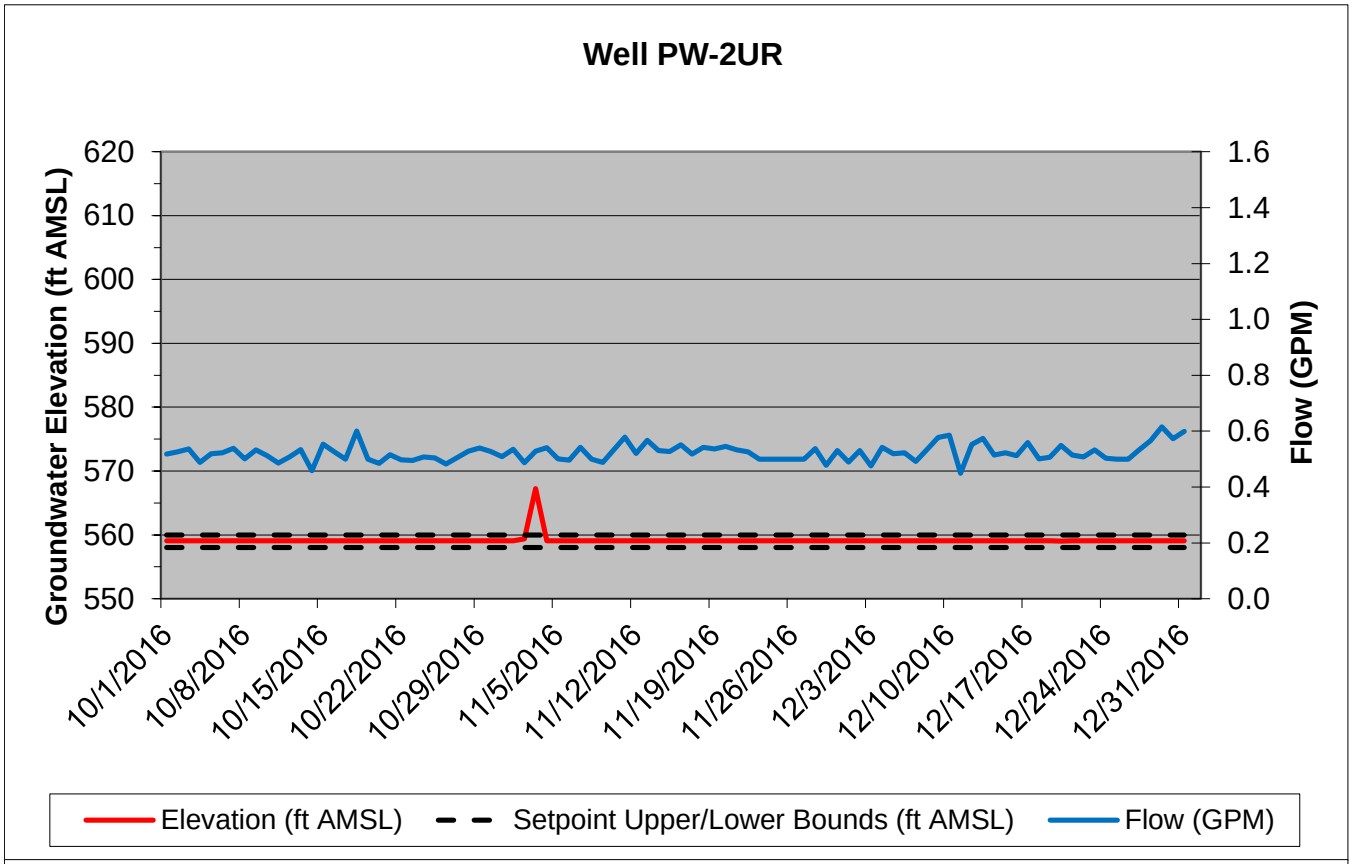


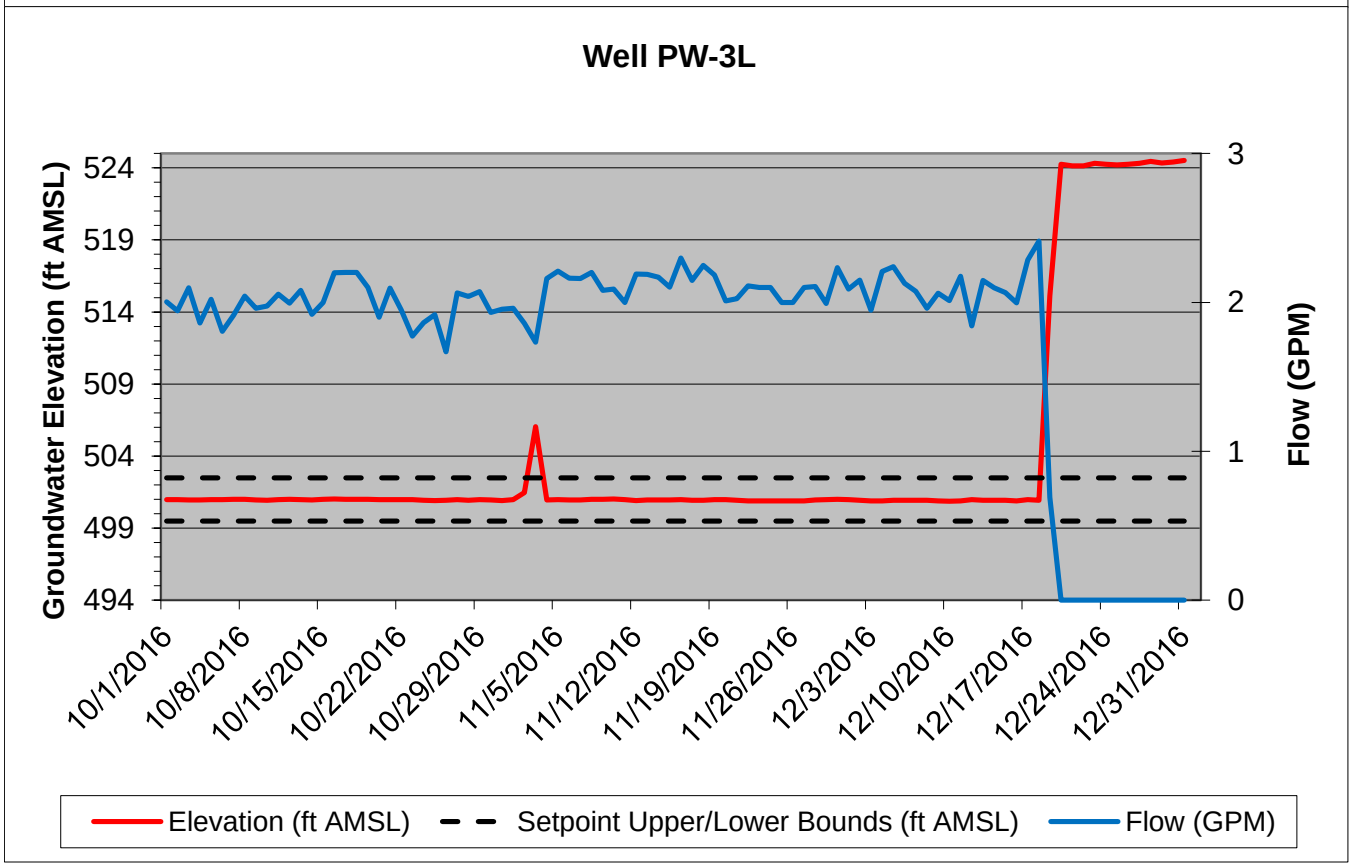
FOURTH QUARTER 2016 - PUMPING WELL PERFORMANCE GRAPHS
HYDE PARK



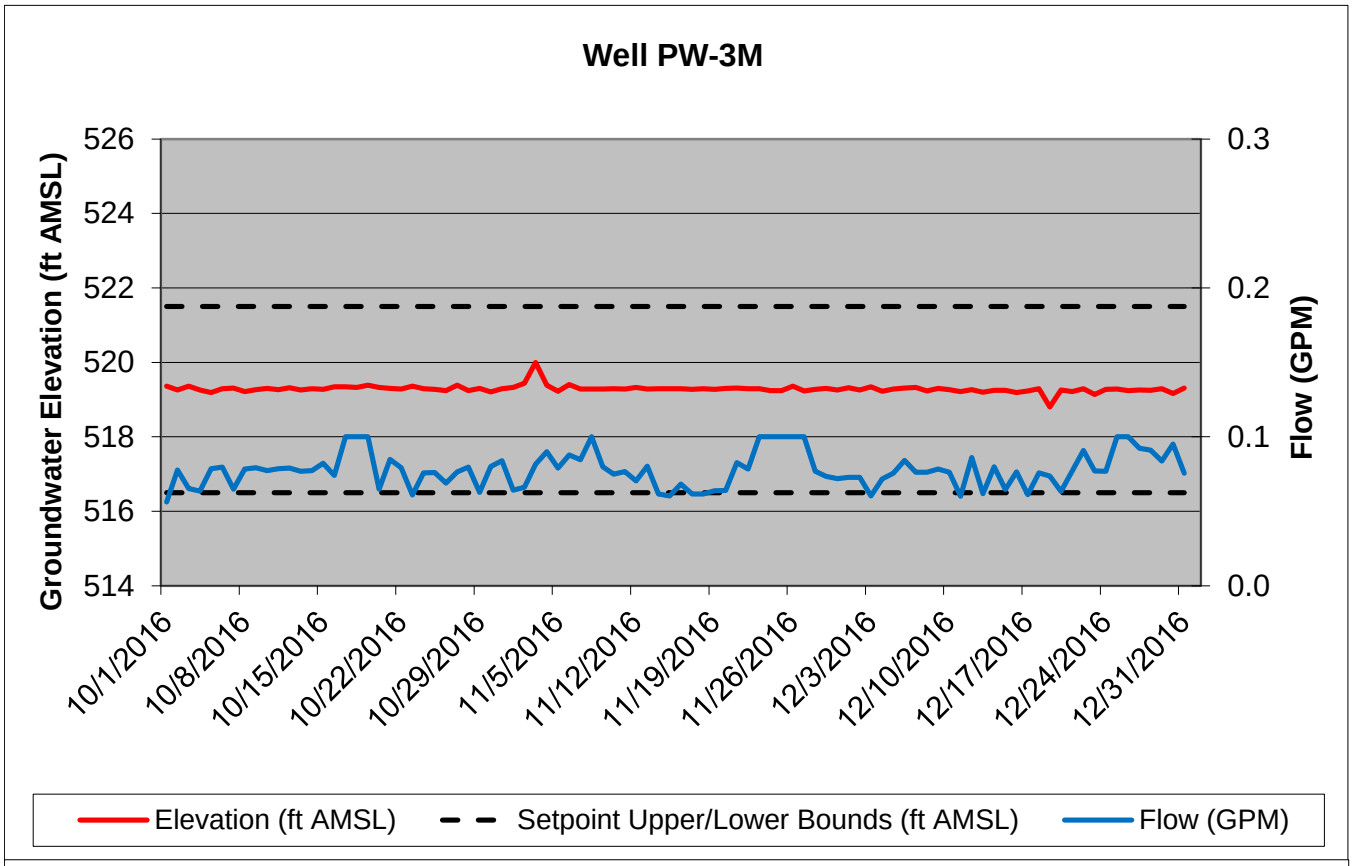


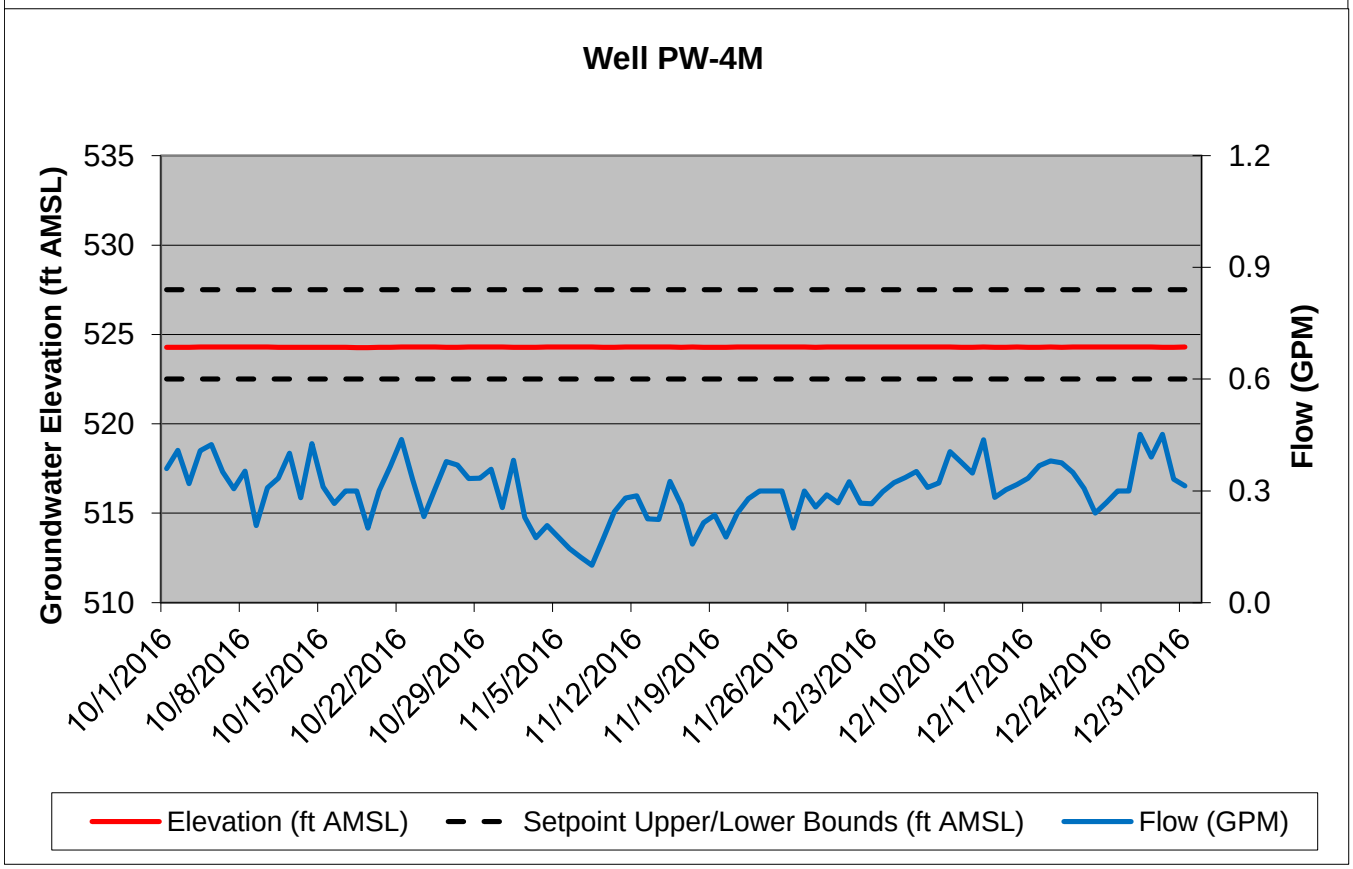
FOURTH QUARTER 2016 - PUMPING WELL PERFORMANCE GRAPHS
HYDE PARK



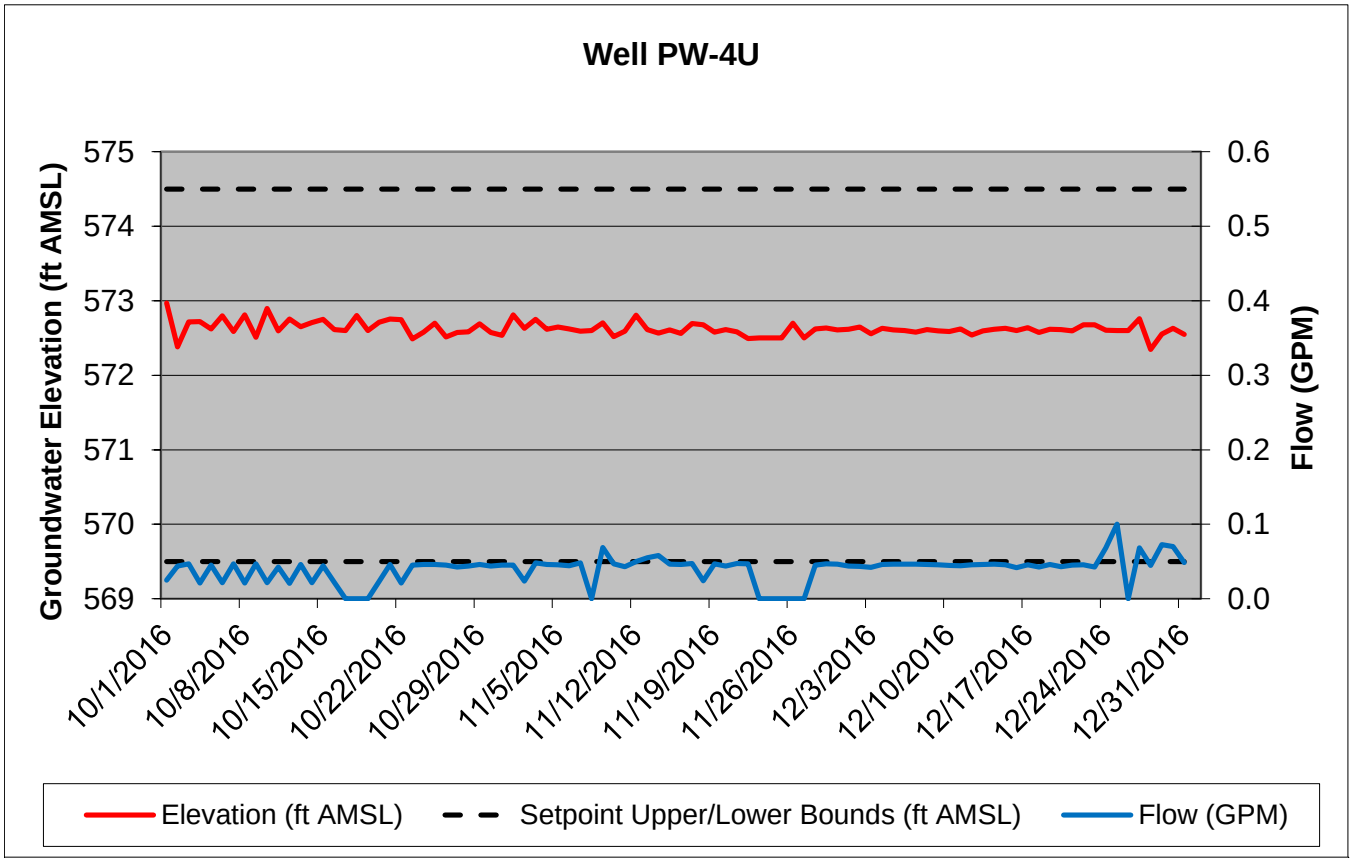


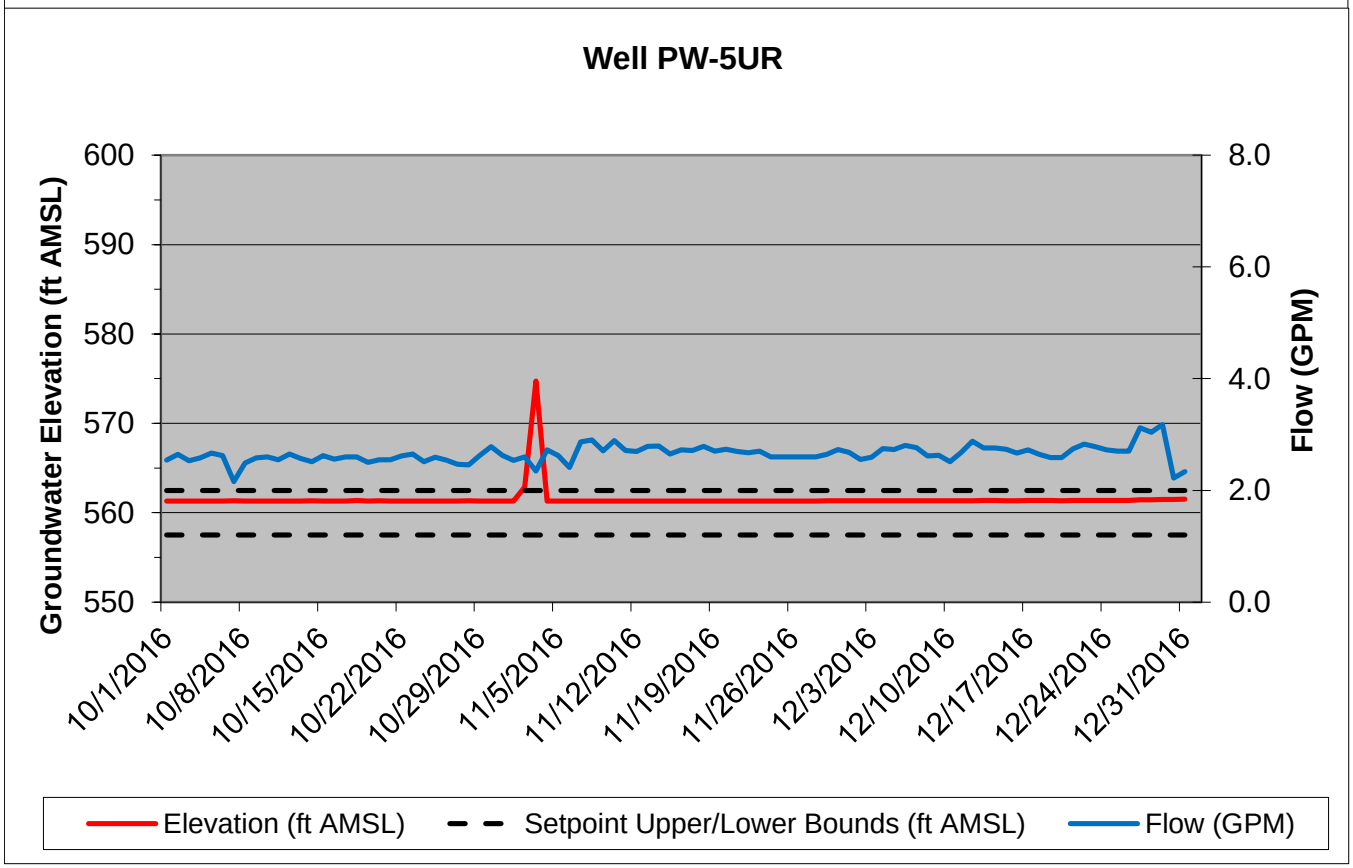
FOURTH QUARTER 2016 - PUMPING WELL PERFORMANCE GRAPHS
HYDE PARK



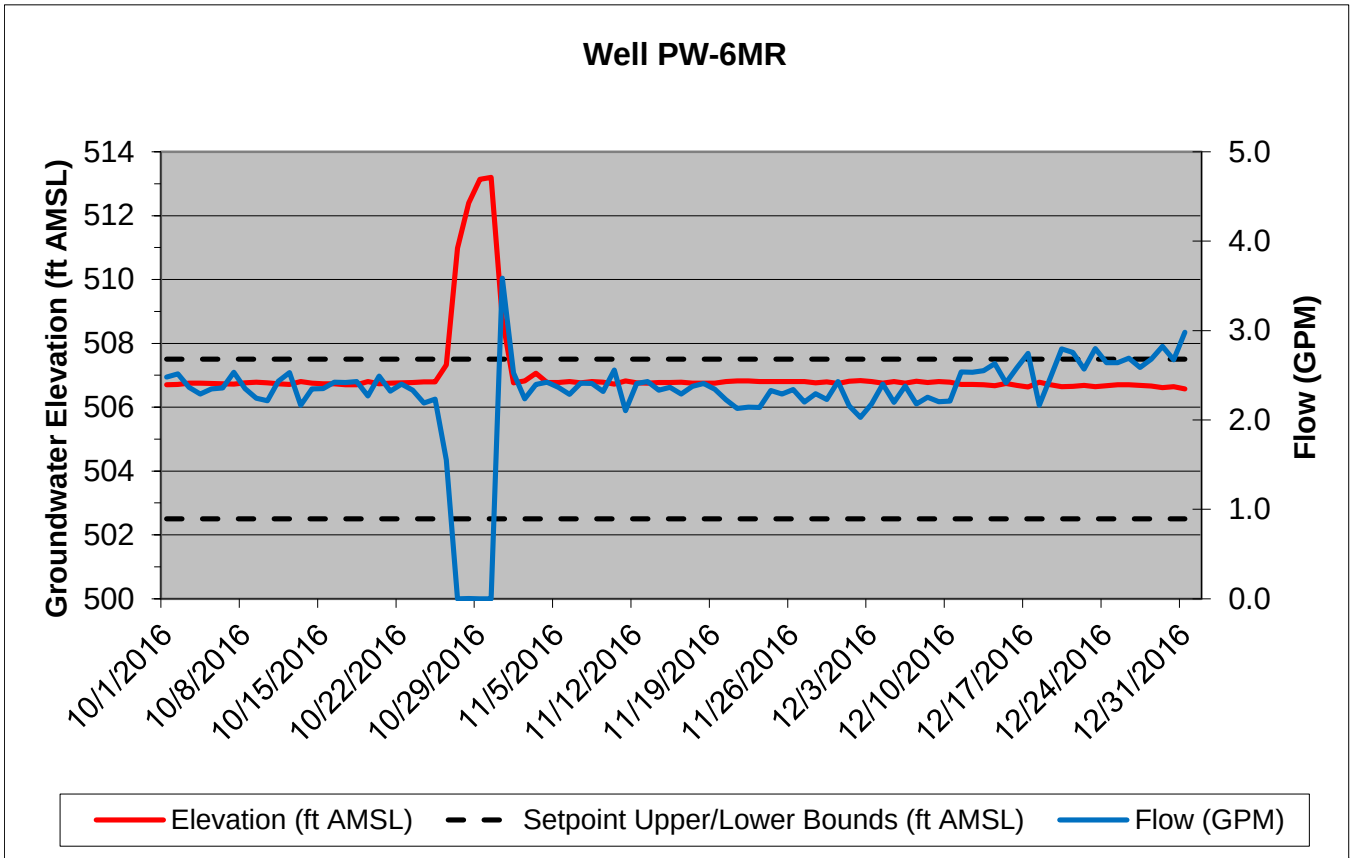


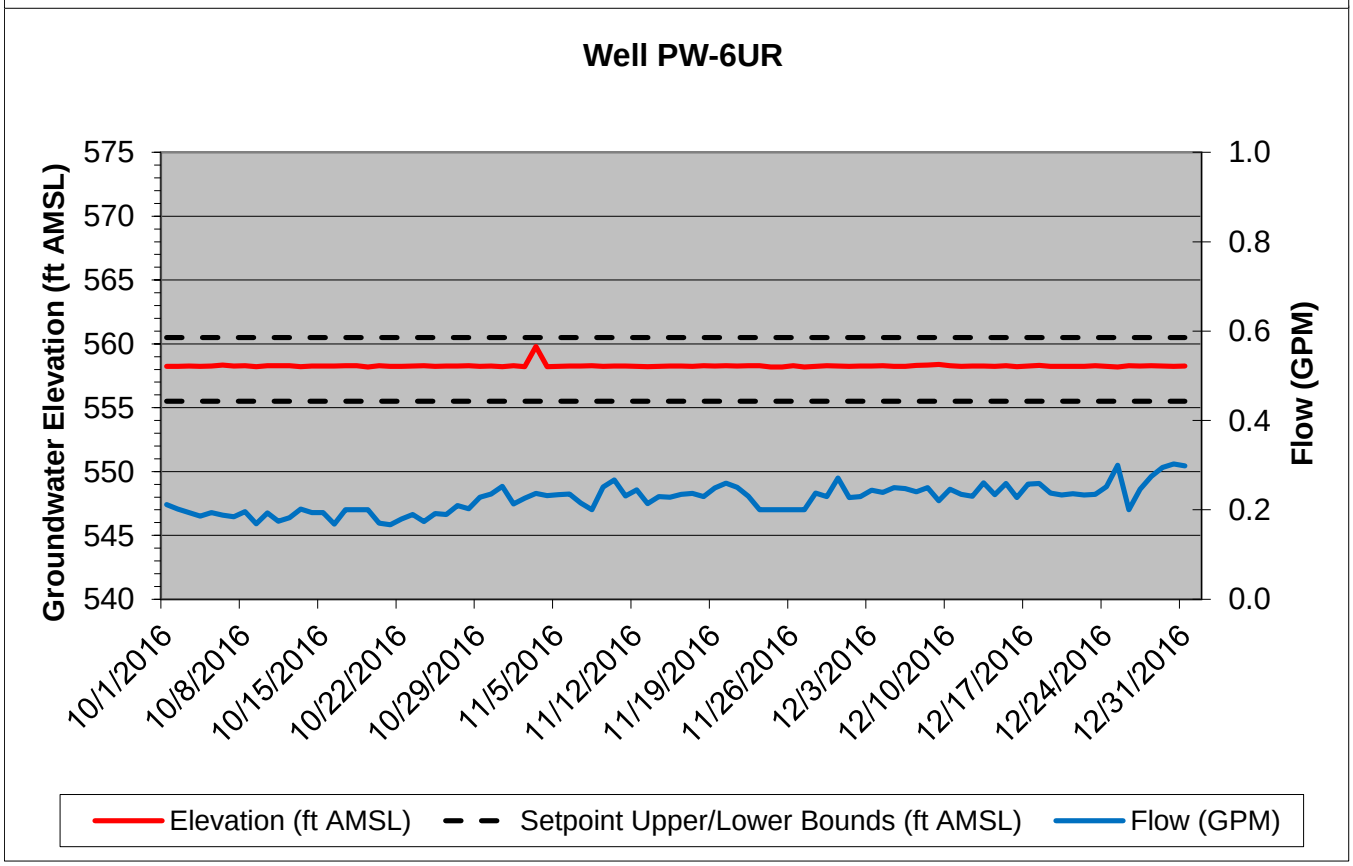
FOURTH QUARTER 2016 - PUMPING WELL PERFORMANCE GRAPHS
HYDE PARK



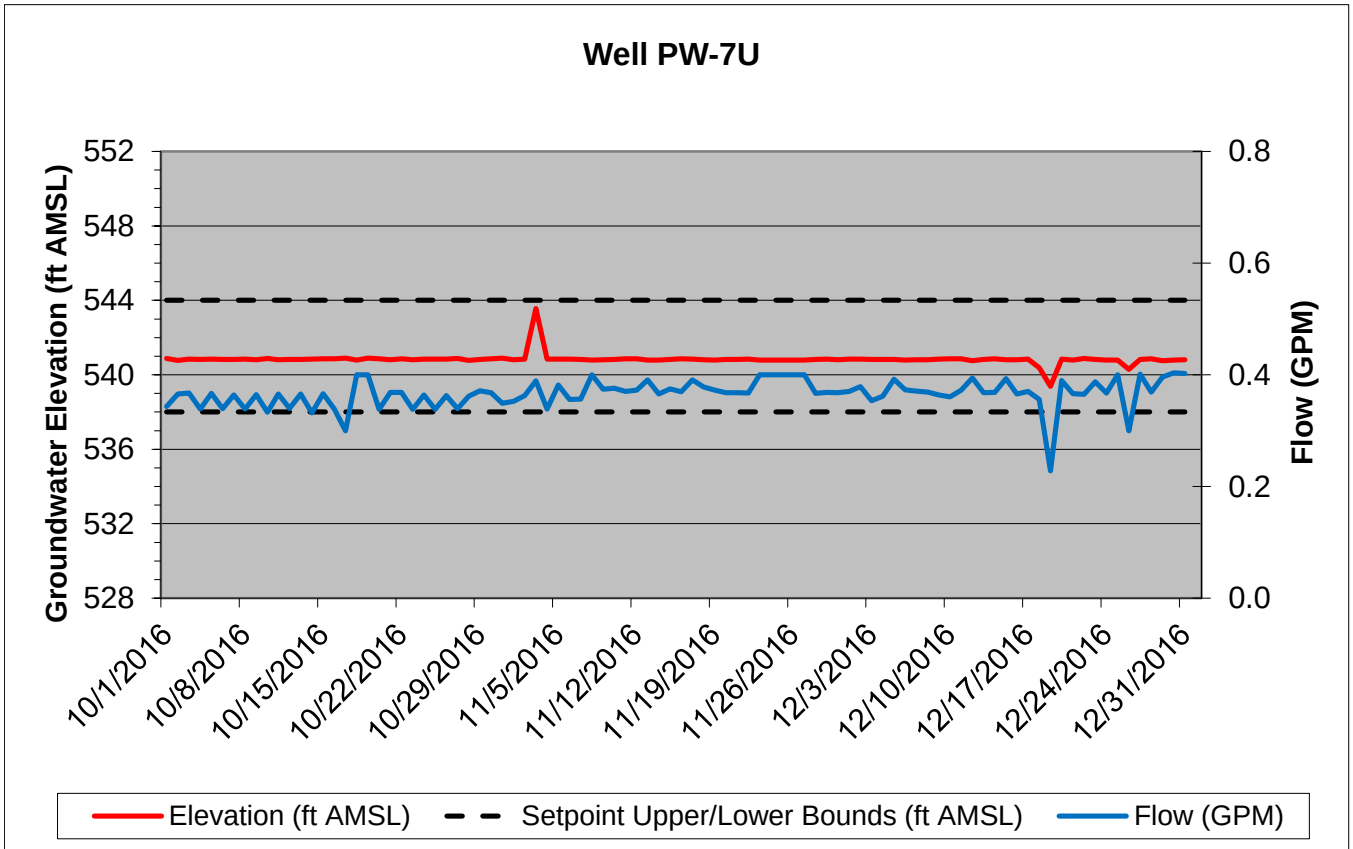


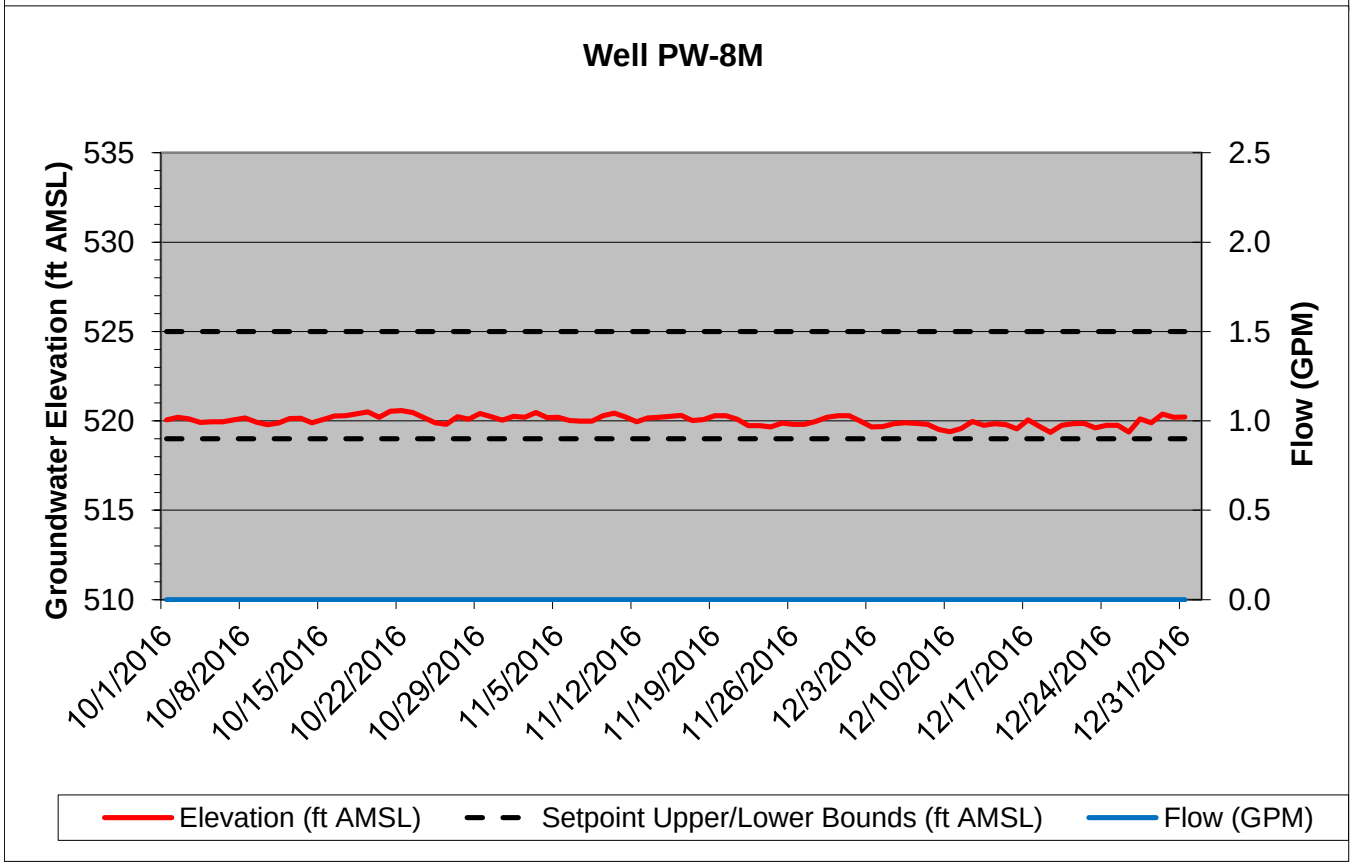
FOURTH QUARTER 2016 - PUMPING WELL PERFORMANCE GRAPHS
HYDE PARK



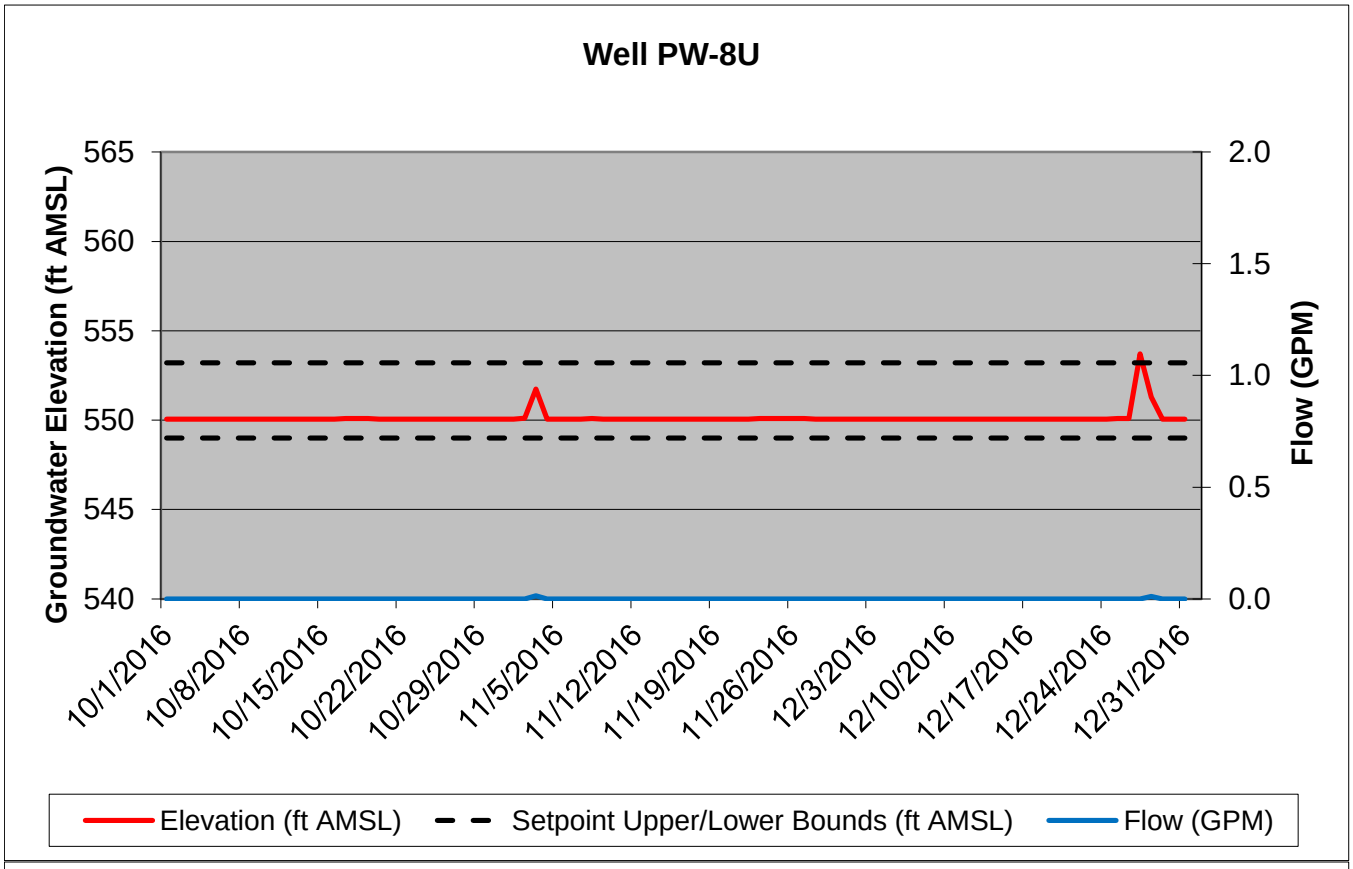


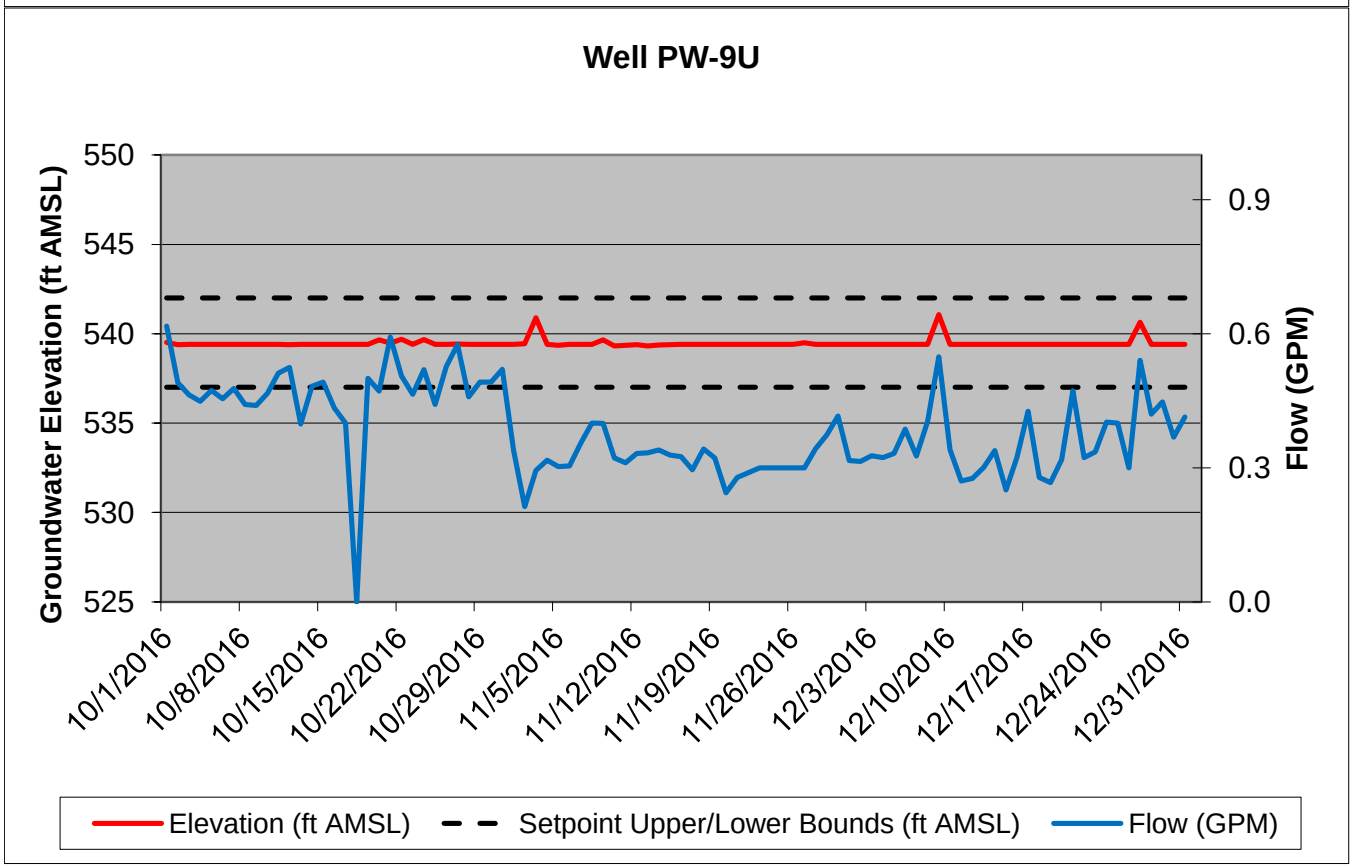
FOURTH QUARTER 2016 - PUMPING WELL PERFORMANCE GRAPHS
HYDE PARK





FOURTH QUARTER 2016 - PUMPING WELL PERFORMANCE GRAPHS
HYDE PARK





FOURTH QUARTER 2016 - PUMPING WELL PERFORMANCE GRAPHS
HYDE PARK